

SUPREME COURT OF THE UNITED STATES  
NO. 141, ORIGINAL

STATE OF TEXAS,                   )  
                                       )  
        Plaintiff,                 )  
                                       )  
VS.                                 ) VOLUME I  
                                       )  
STATE OF NEW MEXICO             )  
AND STATE OF COLORADO,         )  
                                       )  
        Defendants.                 )

TRANSCRIPT OF PROCEEDINGS

The above-entitled matter came on for HEARING before HONORABLE MICHAEL A. MELLOY, SPECIAL MASTER, held REMOTELY via Zoom, on OCTOBER 4, 2021, commencing at 11:02 a.m.;

Proceedings reported by Certified Shorthand Reporter and Machine Shorthand/Computer-Aided Transcription.

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1                   **JUDGE MELLOY:** All right. We'll get  
2 started here. This is in United States Supreme Court  
3 Original No. 141, and Texas versus the State of New  
4 Mexico and State of Colorado with United States as  
5 intervenor. I would ask that we -- well, let me just  
6 start with a couple of the ground rules that we talked  
7 about in the last few hearings. I would ask that  
8 anyone who is not going to be participating in the  
9 proceedings this morning, that their camera should be  
10 turned off, and I would ask anyone who is not speaking  
11 to have their microphones muted until they actually  
12 are speaking, with the exception, of course, of the  
13 witness who will be examined. As I said earlier, I'm  
14 only going to take the appearances today of those  
15 folks who are going to be appearing on the hearing, so  
16 we'll start with Mr. Somach. Do you want to enter  
17 your appearance?

18                   **MR. SOMACH:** Yes, Your Honor. My name  
19 is Stuart Somach. I am the counsel of record for the  
20 State of Texas in this case. Part of the day, Sarah  
21 Klahn from my office, also representing the State of  
22 Texas, and who is currently in Denver at the  
23 Department of Justice -- at the Department of Justice,  
24 she'll pick up, and I'll -- I'll go ahead and -- and  
25 drop off in terms of the picture at that point in

1 time.

2 **JUDGE MELLOY:** All right. Mr. Dubois?

3 **MR. DUBOIS:** Good morning, Your Honor,  
4 James Dubois for the United States. I will be -- as  
5 far as I know, I think I will be the only one speaking  
6 today.

7 **JUDGE MELLOY:** Mr. Wechsler?

8 **MR. WECHSLER:** Good morning, Your Honor.  
9 Jeff Wechsler on behalf of the State of New Mexico,  
10 and also with your indulgence, we'll ask that Attorney  
11 General Hector Balderas be allowed to give a portion  
12 of New Mexico's opening statement, and that's why he's  
13 appearing on the screen.

14 **JUDGE MELLOY:** Happy to have you,  
15 Mr. Attorney General. Mr. Wallace?

16 **MR. WALLACE:** Good morning, Your Honor.  
17 This is Chad Wallace representing the State of  
18 Colorado.

19 **JUDGE MELLOY:** All right. Well, I think  
20 probably we need to start with a little discussion  
21 about the status of the exhibits and Mr. Wechsler's  
22 e-mail yesterday evening. As I understand it, the  
23 issue is who is -- when -- when New Mexico designates  
24 exhibits for cross-examination that are either United  
25 States exhibits or Texas exhibits, who is supposed to

1 supply those exhibits to the court? Is that -- is  
2 that the gravamen of the dispute, Mr. Wechsler?

3 **MR. WECHSLER:** I think that's right,  
4 Your Honor, and I wouldn't say it's a dispute. It's  
5 simply something that we recognized was an issue after  
6 we saw that the United States and Texas would not be  
7 providing copies of their exhibits that we had  
8 designated.

9 **JUDGE MELLOY:** Well, let me ask you  
10 this: Under the protocol, you are to exchange --  
11 well, Texas is to designate its exhibits five days  
12 before a witness is called, and then you have, what,  
13 is it one day, Mr. Wechsler, to respond and designate  
14 your cross-examination exhibits?

15 **MR. WECHSLER:** That's correct.

16 **JUDGE MELLOY:** Okay. Mr. Somach or  
17 Mr. Dubois, would you have any objection to including  
18 your exhibits that are designated by New Mexico in  
19 your packet that you would then send to the court?

20 **MR. DUBOIS:** Your Honor, this is Jim  
21 Dubois. I mean, the -- the packet that we sent to the  
22 court was the exhibits that we designated, and we sent  
23 that before we ever saw New Mexico's list, and so what  
24 we would have to do is on very short order, send out a  
25 new package of exhibits with the ones designated by

1 New Mexico. I guess it could be done, but it's not  
2 going to be on the same time frame. We send out the  
3 exhibits to Your Honor in a folder -- or a notebook, I  
4 should say, when we send out our exhibit list, which  
5 is five days before testimony. Since we don't get  
6 their list until a couple of days later, it would  
7 actually be a second submission to Your Honor in a  
8 separate notebook that would arrive, you know, shortly  
9 before trial. Can it be done? Yes, Your Honor. Can  
10 it be done when we send out our set of exhibits? No,  
11 Your Honor.

12 **JUDGE MELLODY:** Well, let me ask you  
13 this: One of the things I have been wondering about  
14 as we start this process is, is five days the right  
15 number? Do -- should that be pushed back maybe to  
16 five business days, so that when we have a weekend in  
17 there, if it's -- if it's the Monday witness, like  
18 today, then you'll be designating exhibits Monday  
19 previous. Is -- would that -- would that be a burden  
20 on the parties? And maybe -- maybe this whole process  
21 is a little too compressed when we talk about five  
22 actual days as opposed to five or six working days.

23 **MR. SOMACH:** I don't -- I don't think  
24 it's the five days that's the problem. I think  
25 generally, we're working seven days a week, and so as



1 a consequence, whether they're calendar days or  
2 business days somewhat gets blurred in the  
3 distinction. I do think it's a burden on the party  
4 that's providing the direct evidence and testimony to  
5 also have to compile all these cross-examination  
6 materials. I will tell you that I received -- I mean,  
7 we sent out a binder with direct evidence for one of  
8 our witnesses, and the cross-examination binder when I  
9 finally compiled it was twice as large. I just think  
10 the party that's going to cross-examine and who  
11 discloses these materials ought to be responsible for  
12 providing you with -- with the hard copies of the  
13 materials. That's the least burdensome way of doing  
14 it. Otherwise, when we get the list, we then first  
15 have to go back. We have to pull all those documents.  
16 We have to compile all those documents, and then we  
17 have to Federal Express them, when -- when the  
18 cross-examining party already has the documents, they  
19 already know what the documents are. They can send  
20 those out, quite frankly, at the very same time that  
21 they send it to -- to the party that's doing the --  
22 the direct examination, and that's the most efficient  
23 way of doing it.

24 **MR. WECHSLER:** So, Your Honor, in terms  
25 of the most efficient way of doing it, it's the way

1 you had originally conceived, and that is all of the  
2 parties simply provide a full set of the exhibits to  
3 the court. In every other virtual hearing, that is  
4 the way it was done, and in terms of efficiency, this  
5 is exactly the kind of thing that New Mexico was  
6 looking to avoid. We're -- we're not interested in  
7 having to, every day, be determining what packet to be  
8 FedExing or putting in the mail and then having  
9 problems with delivery. That's why we thought it  
10 better if all of the parties provided a full set of  
11 their exhibits and then you can simply have your  
12 assistant pull those at the time it makes sense. In  
13 terms of whether or not New Mexico should be  
14 responsible for U.S. and Texas exhibits, that doesn't  
15 seem fair.

16 **JUDGE MELLODY:** Well, what is your  
17 response, though, to the argument that you know what  
18 you're going to be using for cross-examination and  
19 then if you -- if you -- if we don't -- if you don't  
20 designate those exhibits until one day after the  
21 witness lists are -- I mean, exhibit lists are  
22 exchanged, they have to scramble to pull them and --  
23 and copy them and send them? I guess it goes back to  
24 my question, is this whole process too compressed?

25 **MR. WECHSLER:** Well, I don't think it

1 would be too compressed if Texas and the United States  
2 simply provided a full set of exhibits to Your Honor  
3 and then you have a full set of everything that we  
4 have. Again, we shouldn't be responsible for pulling  
5 United States and printing United States and Texas  
6 exhibits, and we certainly shouldn't be responsible  
7 for then sending those to Your Honor.

8 **MR. SOMACH:** These are not --

9 **JUDGE MELLOY:** The ones --

10 **MR. SOMACH:** Sorry, Your Honor.

11 **JUDGE MELLOY:** I was going to say, the  
12 one problem with getting a full set is, you know, we  
13 received the set that you sent to us, Mr. Wechsler. I  
14 mean, it's I don't know how many volumes, 50 or 60 at  
15 least -- or notebooks, at least, and not all those  
16 exhibits are necessarily going to be admitted, are  
17 they?

18 **MR. WECHSLER:** Certainly not, no.  
19 Certainly not, Your Honor. And had this been an  
20 in-person trial, what we would imagine is that there'd  
21 be, each day, someone pulling exhibits and providing  
22 those to the witness and Your Honor. So, again, in  
23 other virtual hearings that we have participated, a  
24 full set is provided to the decision maker and then  
25 before each day, the parties alert that judge as to

1 what exhibits will be coming the next day, and they  
2 simply have their clerk or their assistant pull all of  
3 those exhibits. And so when Texas and the United  
4 States, we were quite surprised they decided not to  
5 provide you a full set of exhibits and wanted to be  
6 doing this daily mailing process. That was not -- we  
7 were very concerned about the potential implications,  
8 the cost, the burden on our team for doing that. We  
9 didn't object because we decided, well, if that's what  
10 they want to do with their own exhibits, they ought to  
11 have that discretion, but now that we have learned  
12 that they're not intending to provide copies of the  
13 exhibits that we have identified, we recognized that  
14 there was that gap where you would not have a copy of  
15 their exhibits for cross-examination.

16 **MR. SOMACH:** They're not --

17 **JUDGE MELLODY:** Are you -- go ahead. Go  
18 ahead.

19 **MR. SOMACH:** I just want to correct  
20 something. They're not our exhibits. The point  
21 being, these are exhibits that New Mexico is going to  
22 be using on cross-examination. The first time we even  
23 are aware of what exhibits they intend to use on  
24 cross-examination is after we send our exhibits to the  
25 court. That's not a problem. It also avoids, quite

1 frankly, the Court having to go through all those  
2 boxes to pull the -- the exhibits. We will -- we've  
3 done that for the Court by providing exhibits that we  
4 are going to use. All we are suggesting is if New  
5 Mexico intends to use exhibits on cross-examination,  
6 it ought to be New Mexico that provides the Court with  
7 their exhibits for cross-examination.

8 **JUDGE MELLODY:** All right. Well, let me  
9 give this some thought, and I'll let you know what I  
10 decide to do.

11 Let me take up a few other matters  
12 before we get into the opening statements. The  
13 parties have filed a joint submission of stipulated  
14 facts. I will order that to be filed, and those  
15 stipulated facts will be binding upon the parties for  
16 all further purposes in this trial.

17 There is the question of this  
18 evidentiary stipulation as to authenticity of exhibits  
19 with extraneous annotations that was filed this  
20 morning. So what I understand that to mean, and I --  
21 correct me if I'm wrong, is that if there is such a  
22 historical document that has annotations on it, that  
23 the document will be admitted with the understanding  
24 that the annotations will be ignored unless there is a  
25 further submission or authenticity -- authentication

1 of the annotations; is that what I understand the  
2 stipulation to be?

3 **MR. DUBOIS:** Yes, Your Honor. This is  
4 Jim Dubois for the United States. Yes, Your Honor,  
5 that's exactly correct. There are historical  
6 documents. Obviously, these have been pulled from  
7 various files from -- from Reclamation from the State  
8 of Texas, and there are markings on some of them of  
9 basically unknown origin. For the most part, those  
10 documents are, I think, being relied on for the  
11 underlying historical document, and unless there is  
12 some authentication of -- of where those markups came  
13 from, those markups are basically to be ignored.  
14 That's correct.

15 **JUDGE MELLOY:** Okay. All right.  
16 Anybody disagree with that understanding of the  
17 stipulation?

18 (No response.)

19 **JUDGE MELLOY:** All right. I had  
20 indicated or we had discussed at the last hearing, I  
21 believe, whether at the opening of the trial, we would  
22 just admit all the joint exhibits. At this time, I'm  
23 not going to do that for a couple reasons. One is I'm  
24 not sure they're all agreed to is the first problem;  
25 but secondly, I'm also now, I think, a little bit more

1 appreciative of Mr. Dubois' concern that there may be  
2 some documents that may be irrelevant, so at least at  
3 this point in the trial, the joint exhibits will only  
4 be admitted as they are used for a particular witness,  
5 and at the end, we may have a number of joint exhibits  
6 that are not admitted. But at this time as we go  
7 through each witness, we will admit the exhibits for  
8 that witness. Now, I do have the United States Notice  
9 of Exhibit Disclosures and Objections, and when we get  
10 to Mr. Esslinger, I will admit all the A exhibits, and  
11 we'll go -- go forward from there.

12 I think that covers most of the  
13 preliminary matters I wanted to talk about. Oh, one  
14 -- going back to submission of the exhibits. United  
15 States -- I mean -- well, Texas or United States, I'm  
16 not sure which, has submitted a joint exhibit of -- of  
17 the flyover of the drone flyover. You have not  
18 actually submitted the -- a DVD or thumb drive or  
19 anything with the flyover. Is that going -- is that  
20 -- is it my understanding we go to Box.com to look at  
21 that or how -- how do you anticipate that being  
22 provided to me? That's a demonstrative exhibit, I  
23 guess, not a stipulate -- not a joint exhibit.

24 **MR. DUBOIS:** Correct. It is a  
25 demonstrative exhibit, Your Honor. It is on Box.com.

1 If you would prefer to have it as -- on a thumb drive,  
2 we'd be more than happy to send you that, as well, but  
3 it was -- it was uploaded to Box.com. It's a,  
4 roughly, 23-minute, I want to say, like, 4 gigabyte or  
5 something file.

6 **JUDGE MELLOY:** I would -- would you send  
7 a thumb drive? I think it'd be --

8 **MR. DUBOIS:** Absolutely.

9 **JUDGE MELLOY:** -- easier.

10 **MR. DUBOIS:** We will overnight that to  
11 you, Your Honor.

12 **JUDGE MELLOY:** All right. Any other  
13 preliminary matters we need to get into before we  
14 start the opening statements? If not, unless there's  
15 any objection, my -- what I thought I would do for the  
16 order of opening would be Texas, United States,  
17 Colorado, and then give New Mexico the last word. Any  
18 objection to that? If not, then I guess we'll start  
19 with opening statements. Mr. Somach?

20 **MR. SOMACH:** Thank you, Your Honor. I'm  
21 mindful of -- of the Court's admonition with respect  
22 to having heard it all before, and I -- I recognize  
23 that's the case, so I apologize in advance if I -- if  
24 I repeat anything, but I've been at this since 2012,  
25 and so I can't tell sometimes when I'm repeating



1 something that's been rehashed a million times. It  
2 seems to me like it's all been hashed and rehashed a  
3 million times. But the purpose of the opening  
4 statement that we're going to provide is to give, to  
5 provide context to the testimony that Texas, in  
6 conjunction with the United States, will introduce in  
7 the next few weeks and then in the spring, and what I  
8 want to do is do a little linking of what we're going  
9 to do now in the next few weeks with what we're going  
10 to do in -- in -- in the spring so that we can -- we  
11 can kind of bridge the gap a little bit and so you'll  
12 know how it'll all fit together when we're all done,  
13 hopefully, before summer.

14           The case, from our perspective, the  
15 Texas case accepts foundationally the summary judgment  
16 order that the Special Master, that you, issued  
17 earlier this year and treat it somewhat as law of the  
18 case, and the testimony and evidence that we will  
19 introduce will, we think, create a solid foundation  
20 for your recommendation to the Court, as well as the  
21 Court's decision. It'll also do something that the  
22 summary judgment order mentions in that it will fill  
23 in factual gaps through witness and testimony, and  
24 it'll also flesh out the contours of issues that  
25 you've addressed and partially decided in the summary

1 judgment order. The case in chief of Texas focuses on  
2 New Mexico actions or inactions that have resulted in  
3 the interception through groundwater pumping and use  
4 of that groundwater in New Mexico of Rio Grande  
5 surface water that otherwise was apportioned to Texas.  
6 I mean, that's -- that's the fundamental -- that's our  
7 case. That's the most concise way I can articulate  
8 our case. Conceptually, I think our case can be best  
9 understood with reference to a water budget. That is,  
10 the Texas case at its heart is one of arithmetic.  
11 It's not even mathematics. It's arithmetic. It's  
12 addition and subtraction and the accounting of the  
13 various elements within that arithmetic. Now, if I --  
14 if we were there, I would attempt to do what I'm going  
15 to do now by maybe whiteboard illustration, but for  
16 illustrative purposes, I'd like to put up a little  
17 illustration that we've created to kind of demonstrate  
18 what I'm talking about here. So can y'all see that  
19 illustration? Again, this is not a -- it's not even a  
20 demonstrative exhibit. It's not an exhibit. It's  
21 just me trying to illustrate a point that -- that I  
22 would have drawn on a board. But in -- in the top  
23 part of the -- of the illustration, you'll see what we  
24 -- what I characterize as a 1938 Condition. Now, the  
25 elements of -- of the addition part of this are what's

1 in the reservoir, whatever is in the reservoir, and in  
2 addition to that, the addition includes precipitation,  
3 arroyo flows below the reservoirs, as well as return  
4 flows. That is the reuse of water that otherwise has  
5 been directly released from the reservoir and used --  
6 used once. So in the 1938 Condition, there were  
7 depletions. There was always the entitlement that New  
8 Mexico has pursuant to treaty, and then as you've  
9 noted, the remaining supply, what was remaining, was  
10 divided 57/43 between the lands in EBID and the Texas  
11 apportionment that initially goes to EP No. 1. This  
12 little graphic at the top shows return flows. Return  
13 flows were used in New Mexico itself. They -- they  
14 were part of what EBID got, although the further down  
15 you get into the system, the more return flows are  
16 used. Dr. Brandes, in the -- who is one of Texas'  
17 hydrologist engineer experts, who will testify in the  
18 spring, will go over all of this water budget and --  
19 and supply real numbers that go in here. But one of  
20 the things he'll testify to is the fact that as you go  
21 down in the system toward Texas, return flows become  
22 more significant. It's not that return flows aren't  
23 used upstream. It's just that they become of larger  
24 proportion of the water that is -- is delivered. Now,  
25 simply after pumping -- and -- and so what you see to

1 the right, except for return flows, are subtractions,  
2 and if you stop the equation at EBID, what is left  
3 over is what -- what EP No. 1 or what Texas gets. So  
4 if you take a look at -- at the after pumping  
5 situation, what you get is increased depletions. And  
6 we've -- I know we've talked about all of this stuff,  
7 but I want to just illustrate it. And that is you'll  
8 get increased depletions, which include whatever  
9 depletions were analyzed in 1938, but now, you have  
10 depletions that are caused by the increased  
11 groundwater pumping by the municipalities, by ag  
12 within EBID, and then non-EBID ag, and then there's  
13 domestic pumping that occurs, also. The Mexico part  
14 of this equation is the same, and then what's left  
15 over then is allocated 57/43 between EBID and the  
16 Texas apportionment. And I note here that the -- the  
17 57 percent that EBID gets is of a smaller hole, just  
18 like Texas gets, because what we're doing is reducing  
19 surface water supply that is available. A lot of the  
20 difference in EBID is made up through groundwater  
21 pumping, and that's noted in the depletion portion of  
22 -- of this thing.

23 Go ahead and take that down.

24 As -- as I think we've indicated in our  
25 briefing, we don't argue with the basic concept that

1 usable water, project water, is divided 57 percent/43  
2 percent, but as is noted in the summary judgment  
3 order, the question to focus on is 57/43 of what?  
4 That becomes the critical question. Again, I have a  
5 simple graphic. I think you'd recognize how simple  
6 these are -- that demonstrates the point. Let's put  
7 that up. And that's, you know, I think in our  
8 briefing referred to this as the pie example, the  
9 hundred percent of a 16-inch pizza versus an 8-inch  
10 pizza. Here, I just used a box to describe this. In  
11 both the 1938 condition -- excuse me -- in the after  
12 pumping, you're dealing with a hundred percent of  
13 something. Right? So the first thing you have, and  
14 you have this in both the '38 condition and the  
15 after-pumping condition is you have what Mexico gets  
16 pursuant to treaty. Okay. That -- that exists in --  
17 in both the before and the after condition. And so  
18 the hundred percent of what you get, gets reduced by  
19 -- by that Mexico allocation or diversion.

20 Just go ahead and knock that off.

21 Okay. The next thing you have in the  
22 1938 conditions is depletions, which I indicated there  
23 were depletions in 1938, but in the after-pumping  
24 scenario, you get -- you get increased depletions  
25 because of groundwater pumping. You have the surface

1 water being depleted by all of this extra pumping,  
2 which fuels consumptive use. So those become  
3 subtractions or -- or reductions to -- to the system.  
4 So let's take that off if we can. What is left is  
5 57/43 percent. And, again, this, I think,  
6 demonstrates what we're trying to say is that -- that  
7 New Mexico's constant harping that we get 43 percent,  
8 we don't quibble with the fact that we get 43 percent  
9 of something, but what we're entitled to is 43 percent  
10 of the conditions that existed in 1938, not the  
11 conditions that have been created by New Mexico  
12 groundwater pumping.

13 Take that off now.

14 With respect to actual numbers at play,  
15 and there are actual numbers that I avoided putting  
16 them in here because I don't want to testify myself,  
17 but there are actual numbers at play. The testimony  
18 of Dr. Miltenberger, the historian you'll hear from in  
19 a few weeks, as well as Dr. Brandes, who you'll hear  
20 from in the spring, will explain that the 790,000  
21 acre-foot number within the Compact, which you talk  
22 about in -- in your order, was derived from exactly  
23 the type of water budget that -- that I kind of put up  
24 there. That is if you wanted to provide respective  
25 entitlements to EBID and Texas, you needed to account

1 for releases from the reservoir, precipitation,  
2 including arroyo flows, and -- and return flows from  
3 the use of water from EBID lands. That's the --  
4 that's the addition part of the water balance. Then  
5 you subtract from that quantity the consumptive use of  
6 water on EBID lands, as they existed in 1938, and  
7 other losses in the system that existed in 1938, and  
8 you -- you -- you arrive at a sum, and that sum is  
9 what -- what Texas got. If more water is subtracted  
10 for use in New Mexico than the Compact intended, then  
11 Texas doesn't receive its apportionment. I think the  
12 summary judgment order addresses that. Our testimony  
13 and evidence is going to fill in, now, factual gaps  
14 that were noted in the summary judgment order, as well  
15 as flesh out areas that -- that were there but -- that  
16 were noted in the order, also, but the 790,000  
17 acre-foot number was not an arbitrary number. It was  
18 negotiated, but it was negotiated derived from -- from  
19 what the Compact negotiators had in mind that focus,  
20 first, on the Texas apportionment, along with the EBID  
21 and Mexico entitlements, and then it worked backwards  
22 to figure out how much water New Mexico had to put  
23 into the reservoir in order to achieve the  
24 apportionment to Texas and the water that EBID was  
25 entitled to, as well as accounting for the Mexico

1 entitlement. The 790,000 acre-foot number that's in  
2 the Compact, as well as the index deliveries  
3 requirement of New Mexico that are found in -- in  
4 Article 4 of the Compact are absolutely tied to what  
5 Texas and EBID were intended to get and, in turn, were  
6 based upon and relied upon the 1938 depletion  
7 condition. I think as you concluded in the summary  
8 judgment order, groundwater pumping in New Mexico  
9 intercepts return flow, and that has the effect of  
10 increasing consumptive use in New Mexico that, in  
11 turn, results in more water being subtracted upstream  
12 than the Compact intended and allows. This hydrologic  
13 condition, this water balance was known, and the  
14 analysis was conducted in 1938 as part of developing  
15 the Compact. Testimony, again, of Dr. Brandes and --  
16 and Dr. Miltenberger will explain and confirm that --  
17 and, quite frankly, they'll use various exhibits that  
18 will refer to all of this analysis that was done.  
19 They include the JIR report, the Joint Investigate  
20 Report, that you referred to in your order, the  
21 engineering reports for 1937 and 1938 that were part  
22 of the Compact negotiations, and they'll also refer to  
23 the USGS analysis that took place shortly after the  
24 Compact by Conover reports all address and confirm  
25 what I'm saying. And much of this was discussed,



1 including reference to many of those exhibits in your  
2 summary judgment order.

3           Again, Dr. Miltenberger, and in a few  
4 weeks, Dr. Brandes, in the spring, will also directly  
5 address the 1938 hydrologic condition. You know, the  
6 New Mexico position, which we're going to have to deal  
7 with in our -- in our direct case, as we glean it from  
8 their briefing and their depositions, in depositions  
9 we took of various experts and parties within New  
10 Mexico, most specifically Mr. Lopez, who was their  
11 30(b)(6) witness, as well as the state engineer,  
12 Mr. D'Antonio, is that there is no 1938 condition, and  
13 that the only limit on New Mexico's use of water in  
14 southern New Mexico is either a limit that was put on  
15 -- on the taking of water, the diversion of water, and  
16 the pumping of groundwater in permits issued by the  
17 State of New Mexico or whatever the crops need in  
18 order to be grown, whichever is -- is less. New  
19 Mexico recognizes neither a Compact-related limit nor  
20 an obligation to Texas, and in that context, New  
21 Mexico, we believe, ignores the Special Master's  
22 summary judgment order, as it addresses the 1938  
23 condition. Now, interestingly, in the New Mexico  
24 trial brief, it, instead of recognizing a '38 -- 1938  
25 condition, it, and I quote, accedes to the D2 curve as

1 a baseline. Now, you're going to hear a lot of  
2 testimony from the Bureau and from the EBID EP No. 1  
3 witnesses, and, quite frankly, I know from the New  
4 Mexico witnesses about the D2 curve, and as will be  
5 described in all of that -- that testimony, the -- the  
6 D2 curve derives from project surface water deliveries  
7 in the 1951 through 1978 period. It was developed by  
8 the Bureau of Reclamation without regard to  
9 groundwater pumping and use and focuses on surface  
10 water available for the delivery after groundwater was  
11 pumped. Because the Bureau can't control New Mexico  
12 groundwater pumping, it, in essence, incorporates the  
13 effect of groundwater pumping into what had been  
14 available to deliver as surface water, but as I'll --  
15 I'll mention in a minute, it does not incorporate or  
16 -- or agree with or acquiesce to the groundwater  
17 pumping itself. It merely takes what is left over to  
18 it to divert, to deliver, and -- and that is where the  
19 D2 curve was -- was derived from. By necessity, it  
20 includes the effect of groundwater pumping, and so it  
21 -- it, in a sense, incorporates all of the groundwater  
22 pumping that takes place in -- in that 1951/1978  
23 period, and so acceding to using as a baseline the D2  
24 curve is, in fact, no concession at all because it  
25 includes all the groundwater pumping. And it's

1 certainly no guide or -- or -- or no -- no gage of  
2 what the 1938 hydrologic condition was that was  
3 intended as part of the Compact. I know  
4 parenthetically that, of course, this is the second  
5 time that New Mexico has acceded to an adverse ruling  
6 without admitting that it was wrong or, in fact, that  
7 its current views, its D2 view, is something at odds  
8 with -- with what actually was determined in the  
9 summary judgment order with respect to -- to -- to the  
10 1938 condition. The first time they acceded was when  
11 they lost the motion to dismiss, and the Court denied  
12 that motion.

13           As will be discussed by Drs.  
14 Miltenberger and Brandes, the 1938 condition cannot be  
15 the D2 curve, which was based upon, as I indicated,  
16 the 1951 to 1978 project operations. Those operations  
17 took place in a range of from 15 to 40 years post the  
18 effective date of the Compact, but as importantly,  
19 post all the analysis that went into in terms of  
20 developing the Compact. And this idea conflates two  
21 issues. It's wrong because it's wrong, but it's also  
22 wrong because it attempts to combine two issues in an  
23 inappropriate way. New Mexico argues, and the Special  
24 Master, your summary judgment order deals with this,  
25 argues that they will put on evidence associated with

1 course of performance. What that means -- you know,  
2 what course of performance means, of course, is both a  
3 legal, as well as factual in nature. Texas, in  
4 conjunction with the United States, will present  
5 testimony and evidence during the initial stage of  
6 trial regarding how the Bureau of Reclamation, how  
7 EBID, how EP No. 1 understood what -- what was  
8 occurring historically, why they acted as they did or  
9 why they didn't act with respect to certain issues.  
10 Indeed, I'm -- as a preview on all of the U.S./Texas  
11 testimony in the next few weeks to a greater or lesser  
12 degree deals with that very issue, that course of  
13 performance with respect to the project. But with --  
14 but this testimony and related evidence draws a clear  
15 distinction between course of performance related to  
16 the operation in the project, and course of  
17 performance related to groundwater pumping. What  
18 occurred and what was known with respect to  
19 groundwater pumping and project -- and what was known  
20 with respect to project operations are two different  
21 things, notwithstanding that groundwater had an effect  
22 on project operations, that effect was not clearly  
23 understood. What was understood was how the project  
24 was to operate. There's little dispute about how the  
25 Reclamation project was operated from its inception

1     until today, and testimony will be provided by the  
2     Bureau of Reclamation, EBID, and EP No. 1 witnesses  
3     about what was known or should have been known about  
4     those project operations over time, but project  
5     operations deals with what the project, what the  
6     Bureau of Reclamation can control. It deals with  
7     surface water, including return flows. The pumping of  
8     groundwater, which intercepts surface water and return  
9     flows was not apparent, as I indicated, and the  
10    operation of the project doesn't deal with groundwater  
11    pumping at all. What was apparent to the Bureau of  
12    Reclamation, EBID, and EP No. 1 is what they had  
13    control over, and that was what was left over after  
14    New Mexico's groundwater pumping. Texas and the  
15    United States will offer testimony that the Bureau of  
16    Reclamation and EBID do not have control over  
17    groundwater pumping in New Mexico, and that only the  
18    State of New Mexico has the authority to address the  
19    impact of groundwater pumping on surface flows and on  
20    the project and on the Texas apportionment. That's an  
21    authority no matter how much they talk about it in  
22    their testimony, that to date, they have refused to  
23    exercise.

24                   We've grappled -- "we" almost meaning  
25    you and I, but -- but the parties have grappled over

1 time, and the summary judgment order addresses the  
2 question of characterizing the water that EBID gets  
3 with respect to its contract with the Bureau of  
4 Reclamation, and we accept that the summary judgment  
5 determined that it was apportionment to New Mexico  
6 that was defined by the EBID contract with the United  
7 States. We accept it for the purpose of this trial in  
8 any event. The Bureau of Reclamation witnesses, and  
9 Mr. Esslinger, who we will put on in -- in a few days,  
10 who is the treasurer/manager of the Elephant Butte  
11 Irrigation District, will explain the reason for the  
12 view that has been expressed with regard to water  
13 below Elephant Butte Reservoir being a Texas  
14 apportionment. That view is rooted in the historic  
15 operations of the project itself. Texas will present  
16 testimony that at its inception, the project was  
17 wholly owned by the United States and operated by the  
18 Bureau of Reclamation. The Elephant Butte Irrigation  
19 District and EP No. 1 were formed for the primary  
20 purpose of repaying the cost of the construction of  
21 the project and to cover the cost of operation and  
22 maintenance of the -- of the project. As  
23 Mr. Esslinger will call -- will talk about, their  
24 primary function at that point was to -- to produce  
25 revenue in order to repay the United States for the

1 Reclamation project. It was the Bureau of Reclamation  
2 that operated all of the project facilities, and they  
3 operated it as a single unit, and it directly derived  
4 water and delivered water to farmers within EBID and  
5 EP No. 1, not the districts, and they delivered water  
6 without regard to the Texas/New Mexico state line. In  
7 fact, facilities for the distribution of water were  
8 constructed without regard to the state line, and that  
9 unified project, for Compact purposes, and regardless  
10 of the legal correctness of this conclusion, was  
11 considered and had always been considered to be within  
12 Texas. That's where the phrase that you've heard  
13 Compact Texas comes from. That's the phrase. And  
14 you'll see that kind of reference, that -- that notion  
15 that the project is a unity. And many of the exhibits  
16 that will be produced both by New Mexico, as well as  
17 Texas and the United States during the course of -- of  
18 this trial, that is the reason for that, and that's  
19 the historically -- important historical background  
20 behind that. You'll hear testimony from  
21 Mr. Miltenberger and Mr. Esslinger about all of that.  
22 Indeed, there's evidence that would be introduced that  
23 New Mexico should've known that this was the view that  
24 they -- and that they took no action to address that  
25 view. For example, in early versions, around 1985 of

1 the operating agreement -- or an operating agreement,  
2 Texas is defined for Compact purposes to include  
3 Sierra and Dona Ana counties in New Mexico, as well as  
4 the Texas counties of El Paso and Hudspeth. This  
5 unique view is dictated, again, by the logic of making  
6 deliveries to Elephant Butte Reservoir -- New Mexico  
7 making deliveries to Elephant Butte Reservoir, and  
8 treating the Rio Grande project as a unit and  
9 effectively Texas, rather than dividing the project  
10 artificially in terms of the way it operated at the  
11 Texas/New Mexico state line.

12 As noted, the technical case that we  
13 will bring and the United States will bring will be in  
14 the spring, but in its trial brief, and I -- I want to  
15 address this very briefly, and in arguments before the  
16 Special Master, before today, New Mexico has often  
17 referred to the robustness of their evidence and the  
18 robustness of their model of the Rio Grande, and  
19 they've denigrated, quote unquote, the simple nature  
20 of the Texas model. I believe in its trial brief, the  
21 Texas model was described by New Mexico as robotic.  
22 In the spring, we'll present testimony and related  
23 evidence that addresses these New Mexico contentions.  
24 Now, in modeling, as in everything else, there is a  
25 rule, the rule of parsimony. And that rule states



1 that a model should be constructed sufficiently to  
2 answer the questions being addressed, but not greater  
3 or more complex than necessary to answer those  
4 questions. As Mr. Coors, who is our expert with  
5 respect to surface water modeling, Ms. Moran, the --  
6 the United States expert on hydrology, Dr. Hutchison,  
7 the creator of the Texas model, Dr. King, the expert  
8 consultant, hydrologist, and engineer for EBID,  
9 Dr. Blair, the expert hydrologist and engineer for EP  
10 No. 1 will explain, the Texas model adheres to the  
11 rule of parsimony, and the New Mexico model does not.  
12 You will hear testimony from Dr. Hutchison, King,  
13 Blair, and Mr. Coors in the spring about all the  
14 errors in the New Mexico model that are caused because  
15 of the violation of the rule of parsimony. You'll  
16 also hear, ironically, that the adverse impact that  
17 New Mexico groundwater pumping has on project supply  
18 and on the Texas apportionment is so significant and  
19 obvious that even the faulty New Mexico model  
20 demonstrates this fact. And I think the summary  
21 judgment order notes that as part of its  
22 determinations. In addition, Dr. Brandes, Mr. Coors,  
23 Dr. Hutchison, and Dr. King, and Dr. Blair will  
24 testify that the New Mexico model, which was created  
25 according to New Mexico to reflect project operations

1 and show that the harm that project operations and  
2 accounting has caused to New Mexico, in fact, shows  
3 that there has been no harm to New Mexico at all.

4 This leads me to two final points.

5 First, I recognize that I've made this point to you  
6 before, but except for the allegations of adverse  
7 impact to New Mexico due to groundwater pumping in  
8 Texas, none of the New Mexico allegations focus on  
9 actions or inactions of the State of Texas. All the  
10 actions are related to actions taken by third parties  
11 over which Texas neither has control or which are in  
12 any way related to -- to Texas at all. As New Mexico  
13 testimony in this regard is introduced, it will be of  
14 note that New Mexico attempts to avoid what I just  
15 said and -- or they either ignore the distinction or  
16 they attempt to attribute those actions to -- to  
17 Texas. Now, I did pull out groundwater pumping. I  
18 just want to say that we recognize that groundwater  
19 pumping in the Mesilla groundwater basin does have an  
20 effect, and Ms. Estrada-Lopez, shortly, and Dr. Blair  
21 and Dr. King will also address the allegations  
22 associated with groundwater pumping in the Mesilla  
23 portion of Texas and will explain to you what is being  
24 done and what has been done with respect to addressing  
25 those -- those impacts.

1           There are also allegations by New Mexico  
2     that groundwater pumping in Texas in the Hueco Bolson  
3     -- that's the groundwater basin underlying the El Paso  
4     valley -- has had impact upon New Mexico.  
5     Dr. Hutchison, and quite frankly, the New Mexico model  
6     itself, will demonstrate that that just simply is not  
7     the case.

8           Finally, during this first stage of the  
9     trial, New Mexico apparently will attempt to put on  
10    testimony focused on the alleged injury that actions,  
11    as I've just described, by Texas have had on New  
12    Mexico. While we'll object to this testimony, to the  
13    extent it's not been revealed before, it will  
14    nonetheless be of note that in no case will New Mexico  
15    be able to claim that farmers or municipal users of  
16    water in New Mexico had insufficient water supply  
17    because of actions of Texas or, in fact, at all, other  
18    than drought-related shortages. And in the spring,  
19    there will be no expert witness that testimony by --  
20    by New Mexico that will properly address injury.  
21    Texas, in contrast, through the City of El Paso  
22    witnesses that you're going to hear shortly in the  
23    next few weeks, farmers' testimony, and testimony of  
24    EP No. 1, all that testimony will, at least in part,  
25    focus on the injury to Texas caused by New Mexico

1 groundwater pumping, and in the spring, Dr. David  
2 Sunding, the Texas expert economist, will present  
3 expert testimony about Texas' injury that have been  
4 caused directly by New Mexico's actions and the  
5 shortages in water caused by the shortage in -- in --  
6 in water associated with the Texas apportionment.

7 Unless you have any questions, that's  
8 all I have for an opening, and I thank you. I can't  
9 hear you.

10 **MR. DUBOIS:** You're on mute, Your Honor.

11 **JUDGE MELLOY:** I knew I was going to do  
12 that. Thank you, Mr. Somach. I'll turn to Mr. Dubois  
13 now. I do have to say, Mr. Dubois, while I was mainly  
14 getting ready for this hearing earlier today, I did  
15 have the audio of the Supreme Court argument on in the  
16 background, and interesting to listen to the justices  
17 talk about another original action involving water  
18 rights. I don't know if it'll have any impact upon  
19 this case or not, but I did note that you were on the  
20 brief for -- for the United States in that case, as  
21 well, but -- but be that as it may, you're up next,  
22 and you may proceed when ready.

23 **MR. DUBOIS:** Thank you, Your Honor.  
24 And, yes, I was on the brief, and I did not  
25 unfortunately get a chance to listen this morning.

1 I've heard -- I've heard from Ms. Coleman, who was  
2 listening, who's also on the briefs in that case, that  
3 it was interesting, and particularly, I think if -- if  
4 you are from Mississippi.

5 May it please the Court, James Dubois  
6 for the United States of America. Your Honor, I will  
7 be brief. This case revolves around a single fact,  
8 groundwater pumping in New Mexico is impacting the  
9 flows of the Rio Grande that were apportioned by the  
10 Rio Grande Compact. There's a huge problem. It's  
11 interfering with the long-term operation of the Rio  
12 Grande project. New Mexico has known it is a problem  
13 for years, and they have done nothing to address it.  
14 Instead, they're attacking the one action, the 2008  
15 operating agreement, that has tried to actually  
16 address the problem. In sum, the United States  
17 intervened because New Mexico has failed to administer  
18 groundwater use to prevent interference with the water  
19 supply of the Rio Grande project. The project that's  
20 relied upon to effectuate the apportionment  
21 contemplated by the Compact. Water from the Rio  
22 Grande project also serves to meet the United States'  
23 obligations to the county of Mexico under a 1906  
24 Convention, and the continued deterioration of the  
25 river and the aquifer system poses a potential threat

1 to United States' ability to deliver the obligated  
2 water. First, much of the bases for the United  
3 States' claim -- claims in this case have already been  
4 established by prior rulings. The United States, as I  
5 said, intervened in this case because it believes that  
6 New Mexico has a Compact-level duty to avoid  
7 interference with the programmatic apportionment  
8 established by the Compact. United States believes  
9 that the historical documents and testimony of the  
10 historians this fall, particularly Mr. Miltenberger,  
11 will establish that the programmatic apportionment is  
12 through the Rio Grande project and conditions akin, as  
13 you've put it, akin to 1938 conditions. The evidence  
14 presented at trial will show that New Mexico has not  
15 fulfilled its duty. The evidence presented by Texas'  
16 expert historian will demonstrate that the -- the  
17 Compacting states intended to protect the baseline  
18 operation condition for the project that includes the  
19 availability of return flows undiminished by the new  
20 and additional water resource development after the  
21 entry of the Compact. Your conclusion on summary  
22 judgment that the groundwater and surface waters below  
23 Elephant Butte Reservoir are interconnected will be  
24 further supported by the testimony of expert witnesses  
25 presented by the parties next spring. United States

1 believes that the evidence will show, and I don't  
2 think that New Mexico even denies it, that pumping in  
3 New Mexico impacts and depletes the surface water  
4 supply of the Rio Grande apportioned by the Compact.  
5 It simply takes the position that it should not have  
6 to account for those impacts against whatever the  
7 Compact apportioned. The impact of groundwater  
8 pumping on deliveries to Texas, in particular, is at  
9 this point undisputed. You've already concluded that  
10 in summary judgment, the pumping interfered with the  
11 delivery of -- of the Compact apportionment to Texas  
12 in the early 2000s. New Mexico has not taken a single  
13 meaningful step to address that problem in the two  
14 decades sense. Indeed, by New Mexico's own admission,  
15 groundwater pumping has continued pace or even  
16 increased, threatening the long-term viability of the  
17 water supply. The foundation of the United States'  
18 claims have been established as a matter of law at  
19 summary judgment. On summary judgment, you've made  
20 clear that the Compact protects the baseline operating  
21 condition for the project and that New Mexico has, of  
22 course, Compact-level duty to prevent the capture of  
23 surface water, drain return flows, and  
24 hydrologically-connected groundwater, to an extent  
25 inconsistent with Compact deliveries to Texas or the

1 extent it interferes with the long-term operations for  
2 the project. The fundamental question at issue in  
3 this case is really pretty straightforward. The Court  
4 has to determine the apportionment of the flows of the  
5 Rio Grande below Elephant Butte reservoir between  
6 Texas and New Mexico. As you framed it, the question  
7 is what conditions did the Compact intend to protect?  
8 Those akin to the conditions on which the Compact was  
9 based and signed, or those in existence 40 years  
10 later? The baseline of project supply that's to be  
11 protected and how far we are away from that condition  
12 are the core issues. Everything else follows from  
13 that determination, including whether or not the  
14 current conditions are consistent with the  
15 apportionment determined by this Court, which leads us  
16 to the third, to the operating agreement. Despite  
17 what we believe you're likely to hear, this is not a  
18 case about the 2008 operating agreement. First, the  
19 operating agreement is, as you will hear, simply an  
20 agreement among the districts and the United States  
21 regarding what the districts believe to be the fair  
22 management of water that's available to the project.  
23 It certainly does define how water is allocated  
24 between the districts. That's true. But the  
25 operating agreement itself is -- is part of a long



1 history of Reclamation and the districts trying to  
2 adapt the changing conditions and problems, including  
3 those caused by groundwater pumping in -- in New  
4 Mexico and the impacts of that. In particular, the  
5 operating agreement reflects an effort within the  
6 project to adapt to the un-relate -- unregulated  
7 pumping in New Mexico. While you will undoubtedly  
8 hear much about the 2008 operating agreement, it is  
9 simply not the threshold issue you have to determine.  
10 The operating agreement merely defines where the water  
11 is going within the system. Evidence this fall and  
12 analyses to be presented in the spring will show that  
13 operation of the project has not been static, but has  
14 evolved changing circumstances to meet the needs of  
15 the project water users, for instance, that the  
16 transfer of -- of operation of the project facilities  
17 and the need to go from delivering water directly to  
18 the farmers by Reclamation to delivering an allotment  
19 to the districts to manage to their farmers within  
20 each of the districts. So the operating -- the  
21 operating -- the 2008 operating agreement is simply a  
22 continuation of that evolution.

23           You'll also hear that the Compact does  
24 not give New Mexico or the Compact commission roll and  
25 control within the Rio Grande project. New Mexico has

1 never been involved in the operation of the project.  
2 It's never had a contract with Reclamation for project  
3 water, and it's never been involved in water  
4 allocation by the project. New Mexico does not use  
5 the water delivery, in New Mexico, only Elephant Butte  
6 Irrigation District, or EBID, has that relationship  
7 with the project, and you've recognized it. New  
8 Mexico's apportionment is defined by EBID's delivery  
9 under the project. Reclamation alone, or in  
10 conjunction with the districts, has always had control  
11 over the management and use of the project water and  
12 made decisions responsive to changing circumstances  
13 and needs, including the operation of transfers, as  
14 I've mentioned, as well as hydrologic issues.  
15 Reclamation and the districts have made decisions  
16 responsive to addressing problems arising from  
17 consequences of pumping alone by New Mexico;  
18 therefore, even if you determine that current  
19 conditions do not meet the Compact apportionment that  
20 either you or the Court ultimately determines, it is a  
21 matter to be addressed first by the districts of the  
22 United States, not by the State of New Mexico. It is  
23 -- it is the province of the project to come within  
24 the -- the boundaries and the -- the guidelines that  
25 you ultimately provide. As the testimony to be

1 presented, this fall, you will be presented testimony  
2 establishing a factual overview of the Rio Grande  
3 project and its operations starting with Ms.  
4 Estrada-Lopez, who later this morning will give you an  
5 overview of the project and its current operations.  
6 You'll also hear from Mr. Cortez, the past Reclamation  
7 manager, about project operations in the recent past,  
8 and with Mr. Cortez here, recent spans some 40 years.  
9 You will hear from Ms. Spener about the -- from the  
10 International Boundary and Water Commission. She will  
11 explain IBWC's role in assuring water deliveries to  
12 New Mexico, and you will hear from representatives of  
13 the two irrigation districts, which are intended to be  
14 the beneficiaries of the project. This will include  
15 Dr. Phil King, EBID's consulting engineer, and Dr. Al  
16 Blair, EP No. 1, the El Paso County Water Improvement  
17 District No. 1, their engineer. The evidence  
18 presented both this fall through Mr. Cortez,  
19 Mr. Esslinger, and others in the spring through  
20 technical analyses, will show that the impacts of  
21 groundwater pumping have sufficiently interfered with  
22 the long-term project operations to cause the United  
23 States and the irrigation districts to evolve project  
24 operations partially offset that interference. The  
25 testimony by witnesses from the irrigation districts,

1 including Drs. King and Blair, will begin to show that  
2 groundwater withdrawals sanctioned by New Mexico have  
3 adversely impacted the long-term operation of the  
4 project and irreparable injury to federal interests.  
5 Finally, this fall, you're going to hear from expert  
6 testimony from Texas' historian Mr. Miltenberger  
7 regarding the history of the Rio Grande Compact. The  
8 evidence will show that the Compact negotiators fully  
9 understood both the importance of return flows in  
10 defining the Compact's delivery schedules and the  
11 relationship between groundwater and surface water.  
12 The evidence will show that the water supply available  
13 to the projects in 19 -- the project, singular, in  
14 1938, included water release from the Rio Grande  
15 project storage, tributary inflows, and return flows  
16 from initial irrigation use undiminished by  
17 groundwater and water developments initiated after the  
18 time of the Compact. The witnesses this fall will  
19 give -- will give you some detail regarding the  
20 district's operation and provide context and  
21 background for the technical analyses to be presented  
22 by Doctors King and Blair and others next spring. In  
23 the spring, you will hear from the experts, hopefully  
24 live in Cedar Rapids. The testimony -- that testimony  
25 will show that the groundwater pumping in the Rincon

1 and Mesilla valleys -- the Rincon and Mesilla valleys  
2 in New Mexico deplete and diminish the Rio Grande  
3 surface water flows available to the Rio Grande  
4 project and materially interfering with the deliveries  
5 to Texas and interfering with the long-term operations  
6 of the project. Testimony to be presented in the  
7 spring by Ms. Moran, expert for the United States,  
8 will show that both the Texas and the New Mexico  
9 groundwater models demonstrate the groundwater pumping  
10 has significant impacts on the apportioned flows of  
11 the Rio Grande and the availability of -- of -- and  
12 the ability of the project to deliver water to two  
13 districts whose contracts effectuate the  
14 apportionment. Technical analyses by Drs. King and  
15 Blair as well as Dr. Ferguson will support the  
16 conclusion in the 2008 operating agreement does not  
17 create the windfall for Texas claimed by New Mexico.  
18 Indeed their analyses supports the conclusion that the  
19 operating agreement has, at best, returned Texas to  
20 something close to the project water delivery made to  
21 Texas during the 1950s. The United States, therefore,  
22 requests the Supreme Court to enjoin New Mexico to  
23 exercise its authority under state law to prevent New  
24 Mexico water uses from causing ongoing irreparable  
25 injury to long-term operations of the Rio Grande

1 project. Thank you, Your Honor.

2 **JUDGE MELLOY:** Thank you, Mr. Dubois.

3 Mr. Wallace, we'll hear from you next.

4 **MR. WALLACE:** Thank you, Your Honor.

5 I'll be brief. Colorado understands that the scope of  
6 this trial is going to be limited to issues  
7 surrounding the distribution of impacts to water from  
8 the Rio Grande project. With that understanding, the  
9 State of Colorado does not anticipate any impact to  
10 Colorado's water or to its Compact interests.

11 Consistent with our trial brief, Colorado will not be  
12 presenting a case in chief, therefore, I really have  
13 nothing much more to say in opening statement because  
14 we will not be presenting direct witnesses. Thank  
15 you.

16 **JUDGE MELLOY:** Thank you, Mr. Wallace.

17 Mr. Wechsler, how do you and General  
18 Balderas plan to divide up your argument?

19 **MR. WECHSLER:** Your Honor, General  
20 Balderas will take the first portion of the argument,  
21 and I will follow after him.

22 **JUDGE MELLOY:** All right. General  
23 Balderas, you may proceed.

24 **MR. BALDERAS:** Good morning, Your Honor.  
25 May it please the Court. This case is about fairness,

1 fairness as defined by how we all agreed in 1938 to  
2 divide the surface water of the Rio Grande below  
3 Elephant Butte Reservoir. This case is about making  
4 sure that farmers, families, and municipalities below  
5 Elephant Butte get what the states collectively  
6 thought was fair, regardless of which state or state  
7 line they lived on. I know firsthand the struggles of  
8 a small community. I'm from a community of 300 people  
9 on a good day, and not only the first attorney from  
10 that community, but was the first attorney in the  
11 entire era of homesteading in that community in many  
12 generations, and it's not an exaggeration that many of  
13 the small rural communities are not only the backbone  
14 of New Mexico's economy, but we are potentially  
15 risking New Mexico's entire backbone of that economy,  
16 considering that pecan farming, chile farming make up  
17 nearly 10 percent of our GDP. Nearly 50,000 jobs in a  
18 state of only 2 million in population, that impact  
19 cannot be overstated. But this case isn't about those  
20 numbers. To really give us a complete picture, you'll  
21 be hearing testimony about why this case is so  
22 important, meaning those farmers and families that  
23 rely on the actual surface water of the Rio Grande for  
24 their livelihoods. They make this case important.  
25 Later in the trial, you'll hear from several of those

1 New Mexico farmers personally. They've been working  
2 that lab in the lower Rio Grande for generations, but  
3 families can never farm without water. We are at a  
4 critical juncture in our history, and unless New  
5 Mexico starts to receive its fair share of water, we  
6 may see a situation where New Mexico farmers don't  
7 have enough to tend their own fields. You'll also  
8 hear from witnesses that describe the impact to the  
9 City of Las Cruces, and the City of Las Cruces is the  
10 second largest city in New Mexico. They've also been  
11 an integral part of the lower Rio Grande for more than  
12 a century. Last and finally, this case is important  
13 to New Mexico because we really enter into a very  
14 uncertain climate future. We know that climate is not  
15 changing by itself, but we have seen less and less  
16 water as the years go on, and it's critical that this  
17 case that we get as a result a clear and unambiguous  
18 understanding of the obligations of each state, and  
19 also how surface water that remains must be allocated.  
20 Oddly enough, this case didn't start when Texas filed  
21 a bill of complaint with the court. This case started  
22 before that in 2011, when New Mexico sued the U.S.  
23 Bureau of Reclamation because New Mexico was not  
24 receiving its fair share of water, and I believe  
25 during that course, over the course of this trial, you



1 will see that New Mexico is still not receiving its  
2 fair share of water. It's not Texas that is being  
3 harmed in this case; it is New Mexico. Before I turn  
4 it back over to Mr. Wechsler for the remainder of this  
5 opening, I want to personally assure you that New  
6 Mexico, in this proceeding, is not asking for more  
7 than its fair share of water. We are asking only that  
8 Texas be bound to its word and that the project be  
9 operated in a way that allows New Mexico to receive  
10 its fair share. I want to kick it over to  
11 Mr. Wechsler, but thank you, Your Honor, for this  
12 opportunity to address this Court.

13 **JUDGE MELLODY:** Thank you, General  
14 Balderas.

15 Mr. Wechsler?

16 **MR. WECHSLER:** Thank you, Your Honor.  
17 With your permission, we'll share our screen to walk  
18 through our remainder of our opening statement. May  
19 it please the Court, and thank you, General Balderas.  
20 As General Balderas just explained, this case is about  
21 whether the states have enjoyed the benefit of the  
22 Compact by receiving their fair share of project  
23 supply. You'll hear throughout the course of the  
24 trial that New Mexico has not received that equitable  
25 apportionment since 2006. It's a daunting task to

1 summarize the evidence that you'll hear from  
2 approximately 55 witnesses spread out over the course  
3 of seven months, so today, I will limit my discussion  
4 to the evidence related to five issues on which the  
5 case depends. The protective Compact baseline, the  
6 technical modeling efforts by the parties, the  
7 regulatory scheme of the two states, the D3 plus  
8 carryover methodology for dividing water between the  
9 lands and the two states, and whether Texas or New  
10 Mexico have received their equitable apportionment.  
11 So the first question, what is the protected Compact  
12 baseline? You have rightly focused much of this trial  
13 -- this phase of the trial on the baseline or what I  
14 would call the test for Compact compliance. Contrary  
15 to what Texas suggests, we embrace the summary  
16 judgment order, which we think supports our position  
17 in this case, and it's helpful in that regard to  
18 recall what has already been decided because those  
19 principles will guide our trial. First, the Compact  
20 incorporated the project as the mechanism by which the  
21 Compact apportionment below Elephant Butte is made.  
22 As you have found, and as the United States has  
23 conceded, it necessarily follows that project  
24 operations and allocations must be consistent with the  
25 Compact; second, New Mexico is entitled to 57 percent

1 of project supply; and third, unlike the index flows  
2 in Articles 3 and 4, the apportionment below Elephant  
3 Butte, to use your word, is programmatic, in other  
4 words, based on the project operations. So turning to  
5 the principles establishing the baseline, Texas offers  
6 a theory that's not supported by the Compact, and it's  
7 not supported by the evidence. In contrast, New  
8 Mexico's theory of the principle of the Compact  
9 baseline is based entirely on the evidence. Now,  
10 because of the interaction between the Compact and the  
11 project, New Mexico enlisted the help of Mr. Estevan  
12 Lopez, a former United States commissioner of  
13 Reclamation and interstate stream director. He will  
14 explain the operational and reclamation principles  
15 underlying the project in the Compact, and he is also  
16 the only expert offered in this case with expertise in  
17 interstate water allocations.

18           So then turning to the principles that  
19 define the protected baseline, and I'll discuss four  
20 this morning. The first is that the project is  
21 operated as a single unit. You've already heard Texas  
22 concede this point. I think they called this a  
23 unified project in the way it was operated. Now,  
24 you'll hear from Dr. Stephens, New Mexico's historian,  
25 and Mr. Lopez, as well as the Reclamation witnesses,

1     that in 1938, when the Compact was adopted, the  
2     project was operated as a single unit with the same  
3     rules applying throughout the project, and that same  
4     principle is inherent in the Compact baseline. As an  
5     example, the Compact provides for a normal release of  
6     790,000 acre-feet and that amount of water is intended  
7     to meet irrigation demands for all acreage in both  
8     states. That 790,000 acre-feet forms part of the  
9     baseline in that it establishes the amount of water on  
10    which the -- the division is set.

11                 Turning to the second principle  
12    underlying the Compact baseline, we know that New  
13    Mexico is entitled to 57 percent of project supply.  
14    The principle underlying that rule is that every  
15    project acre is entitled to an equal amount of water.  
16    Now, the evidence on this point is too voluminous to  
17    discuss this morning, but I'll point to just a couple  
18    of things. You're already familiar with the letters  
19    from Texas Rio Grande Commissioner Frank Clayton from  
20    the briefing. Dr. Stephens will explain how those  
21    letters and other historical evidence show that  
22    negotiating states intended to base the apportionment  
23    below Elephant Butte on an equal amount of water per  
24    project acre. Second is the Convention of 1906. Now,  
25    we're looking at a slide here from that Convention.

1 In fact, the article -- the treaty with Mexico formed  
2 some of the background principles of the Compact. In  
3 fact, Article 16 specifies that the Compact shall not  
4 effect the United States' obligations to Mexico. This  
5 is important because of the provision of the  
6 Convention that is shown here. You can see that below  
7 the table, in times of extraordinary doubt -- drought,  
8 the amount of water delivered to the Mexican Canal,  
9 quote, shall be diminished in the same proportion as  
10 the water delivered to lands under said irrigation  
11 system in the United States. As you'll hear from  
12 Reclamation witnesses, in order to ensure the  
13 Convention is followed, every year Reclamation  
14 performs a status check to make sure that the amount  
15 of water allocated to each project acre is reduced in  
16 the same proportion as the water allocated to Mexico,  
17 thus supporting that principle. In addition, you're  
18 familiar with the 1938 downstream contracts, and we  
19 know that the Court has found that these contracts  
20 were incorporated by reference into the Compact as the  
21 mechanism -- as -- as part of explaining the division  
22 of the water. Many witnesses throughout the trial  
23 will testify that this contract requires that each  
24 acre of project land receive an equal amount of water  
25 in times of shortage or at least an equivalent amount

1 in the aggregate. And -- and turning to the project  
2 operations from 1938 to 1979, Dr. Barroll, Mr. Lopez,  
3 and numerous Texas and U.S. witnesses will explain  
4 that from 1951 to 1979, Reclamation operated the  
5 project so that every acre was allotted an equal  
6 amount of water, and from 1980 to 2005, Reclamation  
7 used the D1 and D2 curves that you've heard about to  
8 ensure that each district was allocated an amount of  
9 water equivalent to -- to that equal amount per acre,  
10 up to 3.024, which was considered the full supply, and  
11 to this day is considered the maximum amount of water  
12 that each acre can receive. On this basis, the water  
13 was allocated 57 percent to New Mexico and 43 to  
14 Texas, but unfortunately, as the slide we're looking  
15 at here shows, the evidence will show that project  
16 supply is no longer allocated on that basis or on the  
17 principle of an equal amount per acre. You can see  
18 here in the orange, the EP No. 1 allotments each year  
19 where they max out at 4 acre-feet per acre compared to  
20 the amount of project supply that EBID has allotted,  
21 which is significantly less -- less than half of that  
22 allotted to EP No. 1.

23 So turning to the third principle  
24 underlying the baseline condition, and that is about  
25 waste. Mr. Lopez will explain that this third

1 principle and that the project should be operated to  
2 -- in a way to limit waste. As I said, the project  
3 operates as a unified whole. You'll hear from both  
4 Reclamation witnesses and Hudspeth representatives  
5 that at the end of the project is Hudspeth, and  
6 Hudspeth is not a project beneficiary and is entitled,  
7 therefore, only to waste. New Mexico experts will  
8 explain that limiting waste is an established  
9 principle of Reclamation projects, and that principle  
10 is particularly important for the Compact because  
11 excess waste out the bottom impacts other articles of  
12 the Compact, including Articles 7 and 8. But as  
13 illustrated in this slide, waste increased  
14 significantly once EP No. 1 began operating the  
15 project in the 1980s. In fact, you'll hear that EP  
16 No. 1 has contracts in place to sell excess water to  
17 Hudspeth, meaning they have more water than they think  
18 they need. Now, this matters to the Compact because  
19 if the water were not wasted flowing out the bottom or  
20 sold to Hudspeth, then it would be in project storage,  
21 and if it were in project storage, it would be  
22 available for division and use in New Mexico and  
23 Texas, as well.

24 All right. So turning to the fourth  
25 principle underlying the Compact baseline, and that is

1 of conjunctive use and the idea that supplemental  
2 groundwater pumping has always been allowed to meet  
3 irrigation demands. Now, the evidence will show that  
4 supplemental groundwater use has always been a part of  
5 the project, and, in fact, the project's very survival  
6 depend on it. Supplemental groundwater pumping forms  
7 the background principle of the Compact and the course  
8 of performance establishes that the states always  
9 understood that the Compact did not prohibit  
10 supplemental groundwater pumping below Elephant Butte.  
11 As what -- as but one example shortly after the  
12 Compact was adopted, the first drought arose, and the  
13 parties reacted by pumping groundwater as a  
14 supplemental supply to meet irrigation demands in both  
15 states. Now, at this time, there were people involved  
16 who had negotiated the Compact, as you'll hear from  
17 Dr. Stephens. But even that was true, no party  
18 complained that groundwater pumping was not allowed.  
19 In fact, it was encouraged, as we'll see on the next  
20 slide. And you'll hear witness after witness testify  
21 that the groundwater is an accepted feature of the  
22 project. So we know that, and you've heard before  
23 that Reclamation actually encouraged groundwater.  
24 Witness after witness will explain that that happened,  
25 and that the use of groundwater wells was encouraged



1 throughout the project. Now, we're looking at a  
2 single exhibit from 1954. This is Joint 227. But  
3 it's just one of many documents that you'll see that  
4 -- that look like this. Witness after witness will  
5 confirm that the states, the districts, and  
6 Reclamation all understood that groundwater pumping  
7 effected surface flows, and yet you'll see no evidence  
8 that any state complained that groundwater pumping  
9 constitute a Compact violation until very recently.  
10 In fact, you'll hear that the City of El Paso tried to  
11 appropriate New Mexico groundwater in the 1980s. Now,  
12 Texas -- Texas and the United States' own witnesses  
13 will tell you that when Reclamation developed its  
14 allocation procedures, it grandfathered in groundwater  
15 pumping up to 1978 through the use of the D2 method  
16 and even in the 2008 operating agreement, that method  
17 is based on the D2 allocation for Texas lands, not New  
18 Mexico, but for Texas lands, which incorporates the  
19 effects of groundwater pumping in its allocation, as I  
20 think Texas and the United States conceded in their  
21 opening statements. Now, the operating agreement goes  
22 onto specifically reference the Compact, and it says  
23 that it, meaning the operating agreement, including  
24 its allowance for groundwater pumping, is not  
25 inconsistent with the Compact. In short, you'll hear

1 that groundwater pumping has always been a part of  
2 farming and municipal use in both New Mexico and in  
3 Texas, and the evidence will show that the communities  
4 and economies in both states have grown around the  
5 mutual understanding that groundwater pumping is  
6 permitted by the Compact. So before I -- this slide  
7 that we're looking at here illustrates the concept of  
8 how groundwater use was used throughout the -- the  
9 project, and you can see on the left, the municipal  
10 and industrial wells in the El Paso Valley, and on the  
11 right, the green line there that you can hardly see is  
12 the river, and the reason you can't see it is because  
13 of all the blue irrigation wells, again, in the El  
14 Paso Valley. Now, New Mexico has modeled multiple  
15 aspects of this Compact baseline, and this will allow  
16 you to understand the impact of different types of  
17 water use. For example, the modeling will show the  
18 impact of different infrastructures or levels of  
19 groundwater pumping to support your decision. I think  
20 Mr. Somach recognized in his opening statement that  
21 Texas' model actually doesn't have that ability.  
22 Mr. Somach also mentioned that D2 -- New Mexico is  
23 willing to accept the D2 method as the standard for  
24 Compact compliance, and we did indicate that in our  
25 trial brief. Now, the -- the longstanding D2 method,

1 which was utilized from 1980 to 2005, is -- is  
2 generally consistent with the baseline principles that  
3 I just outlined. It's consistent in that it's based  
4 on operation of the project as a single unit. It's  
5 consistent in that it allocated water based on an  
6 equal amount of water per acre. It's consistent in  
7 that during that period, they limited waste, and it's  
8 consistent in that it incorporates the effects of  
9 groundwater pumping. Given that the states both  
10 accepted this D2 division for decades, and given that  
11 it is generally consistent with the Compact, New  
12 Mexico is willing to accept the D2 curve as that  
13 baseline. We think that it's historically  
14 significant.

15           Before I move on from the -- the Compact  
16 baseline, I do want to say just a word about the Texas  
17 1938 Condition. Let me say that the evidence does not  
18 support Texas' theory that all depletions were set in  
19 1938, their so-called 1938 Condition. Again, the  
20 evidence will be abundant and very one-sided on this  
21 point. The theory is not consistent, in fact, with  
22 the way the project was operated from day one.  
23 Instead, there have been a large number of changes in  
24 both states that have lasted over many years and that  
25 affect the amount of water available for lands in each

1 state. Those, in fact, conditions can change on a  
2 regular basis. As just one example, you're looking at  
3 the authorized acreage in over the years, and you can  
4 see that in 1938, the acreage in EBID wasn't even  
5 fully built out, even though the project clearly  
6 always intended to have a full build out of the  
7 authorized acreage. Again, this -- this completely  
8 undercuts the Texas theory of a 1938 Condition. As  
9 another example, you'll hear directly from the farmers  
10 that they have always been allowed to change their  
11 crops and their irrigation methods, something that the  
12 Texas condition would prohibit and something that  
13 Texas' position on this point is inconsistent with  
14 Supreme Court precedent. And the evidence will show  
15 that the project and the basin form a dynamic system  
16 that demands the flexibility of the programmatic  
17 approach that you have said is required.

18 All right. So turning, now, to the next  
19 issue that I said I would discuss, is it -- is it  
20 necessary to model the impact of project operations to  
21 determine whether actions are in compliance with the  
22 Compact? We think the answer is clearly yes. The  
23 Court and you have both confirmed that the project is  
24 the mechanism by which the apportionment is  
25 accomplished. It's, therefore, necessary to model and

1 understand these project operations. Texas has  
2 constructed a simple model that fails to answer the  
3 questions posed in this case. Because it cannot model  
4 project operations or the effective changes to those  
5 operations, the answers provided by the Texas model  
6 are simply not useful. You'll hear even from some of  
7 Texas' own witnesses, the flaws in its modeling and  
8 its expert analysis. On the other hand, as you can  
9 see shown in the model, the -- the New Mexico  
10 integrated model simulates the entire project area.  
11 It simulates operations from all of the relevant  
12 parties. It's rule based. It includes operation of  
13 the Elephant Butte and Caballo reservoirs, something  
14 that Texas experts initially began to evaluate, but  
15 weren't able to complete. It uses a monthly time  
16 step, and it's able to evaluate things like changes in  
17 reservoir operations and the impact on water users,  
18 changes in project water allocations, which is at the  
19 heart of the equitable apportionment and irrigation  
20 demands. In short, it's a reliable tool on which you  
21 can base your decision. Moving to the next issue, do  
22 the states have a regulatory scheme in place that are  
23 consistent -- that is consistent with the Compact? So  
24 let's start with New Mexico. New Mexico has always  
25 made every effort to comply with the Compact, and part

1 of that effort is a robust scheme for administering  
2 water both above and below Elephant Butte. It helps  
3 that the New Mexico state engineer is also the Compact  
4 commissioner for the state. He, therefore, has broad  
5 authority to monitor and control water use to comply  
6 with the Compact, and as part of that control, New  
7 Mexico declared the relevant basins, groundwater  
8 basins, in 1980 and 1982. You're looking at the front  
9 page of the 1980 declaration, which is a trial  
10 exhibit. That action was protested by the Texas  
11 commissioner at the time, and Texas was arguing that  
12 farmers needed unrestricted groundwater pumping, and  
13 New Mexico should not limit that groundwater pumping,  
14 but that action by New Mexico had the effect of  
15 preventing new depletions caused by groundwater  
16 pumping in New Mexico, and the timing is also  
17 significant because 1980 is approximately the time  
18 that the D2 curve was put into place, and as you've  
19 heard, D2 incorporates all of that data, including the  
20 effects of groundwater pumping, up through 1978.

21           You'll also hear from Rolf  
22 Schmidt-Petersen, the director of the New Mexico  
23 Interstate Stream Commission. He will explain that  
24 the ISC is a unique body charged with ensuring that  
25 New Mexico complies with all of its interstate water

1 responsibilities, and he'll describe the work and  
2 communications that we had with the State of Texas  
3 over the years over Compact issues. And you will hear  
4 from Ryan Serrano, the water master in the lower Rio  
5 Grande. He will explain how he and his team monitor  
6 and regulate all groundwater use in the lower Rio  
7 Grande, ensure that all water use, surface and  
8 groundwater, is in conformance with the adjudication  
9 and applicable rules, and prevent -- and prevent over  
10 diversions. So let's turn to Texas then. Now, in  
11 contrast, Texas takes the position that nothing  
12 happens in the El Paso Valley matters. In fact, we  
13 looked at a slide earlier from Mr. Somach that  
14 completely ignored Texas. We saw no mention of the  
15 Texas district on that slide. They've acted like  
16 nothing matters in -- in Texas, but Texas is not  
17 correct. You'll hear that actions in Texas impact  
18 project supply in the exact same way that actions in  
19 New Mexico do, and that's true because the project is  
20 operated as a single unit, and so anything that  
21 reduces supply or reduces the overall amount in  
22 project storage and, therefore, the amount available  
23 to be divided. To make matters worse, the operating  
24 agreement charges New Mexico water users with  
25 depletions caused by Texas water users. So turning to

1 the New Mexico -- the Texas regulatory regime, unlike  
2 New Mexico, the Compact commissioner for Texas is not  
3 a water official and has no authority over water  
4 administration at all, and unlike New Mexico, Texas  
5 has no applicable rules and conducts no meaningful  
6 water regulation. There's simply no limits on  
7 groundwater use in Texas. A Texas water user can pump  
8 as much groundwater as she wants without any  
9 oversight, and since there's no monitoring in Texas,  
10 we don't even have a way to track the amount that's  
11 pumped, and the -- the effects can be seen in the  
12 slide that you're seeing. We're looking at the  
13 groundwater levels in 1938 in the blue area in Texas,  
14 but if we click on 2017, we can see that the lack of  
15 regulation in Texas has caused significant drawdowns  
16 in groundwater levels, some as high as in the hundreds  
17 of feet. Now, one of the concerns that New Mexico has  
18 with the operating agreement is it has forced New  
19 Mexico water users to rely on groundwater pumping. We  
20 do not want to mine our aquifer in New Mexico. It has  
21 long-term potential impacts. So we're trying to avoid  
22 exactly what has happened in Texas.

23           Turning to the next issue, is the  
24 current methodology for dividing the project supply  
25 consistent with the Compact requirement that New



1 Mexico receive 57 percent? And here, we think that  
2 the answer is clearly no. Reclamation ignored  
3 unanimous requests from the Rio Grande Compact  
4 Commission, and when it's unanimous, that means it  
5 also came from the State of Texas, to consult on the  
6 project allocation process when it adopted the  
7 operating agreement and the D3 methodology. You will  
8 hear New Mexico State Engineer John D'Antonio describe  
9 the way that the operating agreement turned New Mexico  
10 into the downstream state. Now, it did that by  
11 adopting a process that awards EP No. 1 its allocation  
12 first every year so that EP No. 1 is guaranteed its  
13 entire D2 allocation. But the same is not true for  
14 EBID. Instead, EBID gets whatever is left over. It  
15 allocation is set by using the diversion ratio, which  
16 charges all deviations from the D2 curve to New  
17 Mexico. Now, what does that mean? It means if you  
18 look at this slide, the blue line represents the D2  
19 curve, basically the historic operations from 1951 to  
20 1978. It was used as the baseline for the division of  
21 water until 2005, and it's still used as the basis for  
22 EP No. 1's allocation. Now, due to accounting  
23 changes, water supply changes, and other activities in  
24 the basin, including groundwater in Texas and New  
25 Mexico, releasing the same amount of water today

1 results in a little less being delivered. That's  
2 referred to as the gap. And you can see the gap  
3 illustrated on this slide in that little green arrow  
4 there, the difference between the red triangle and the  
5 blue line, the blue line being D2 and the red being  
6 the amount that can be delivered for those particular  
7 years. Now, the assumption in this methodology that I  
8 just described is that it is only -- actions in New  
9 Mexico and only actions in New Mexico that caused the  
10 gap, but Reclamation did not analyze the source of the  
11 deviations before adopting the operating agreement,  
12 and, in fact, it does not analyze the cause of the gap  
13 even today when it does its allocations. Dr. Barroll  
14 is the only expert in the case to have analyzed the  
15 deviations from D2, and she will show that much of the  
16 gap comes from actions that occur in Texas or Mexico,  
17 the lack of river maintenance, or sweetheart  
18 accounting agreements that benefit El Paso No. 1 and  
19 not EBID. So let me give you an example. This slide  
20 shows effluent being released from the Haskell  
21 wastewater treatment plant. You saw this location on  
22 the basin tour. During the irrigation season, much of  
23 the water comes from project supply that goes into the  
24 treatment plant, and then it's discharged into the  
25 American Canal Extension. During the D2 period, that

1 supply, along with the effluent that was discharged,  
2 form part of project supply. Now, in New Mexico,  
3 there also is effluent from the City of Las Cruces and  
4 other entities. In New Mexico, that effluent is  
5 charged against EBID's allocation, in other words, it  
6 forms part of project supply. But a different rule  
7 applies in Texas. Due to a change in the accounting  
8 methodology to which New Mexico did not agree, EP No.  
9 1 is not charged for this effluent from Haskell, even  
10 though it's still being used by EP No. 1 farmers. In  
11 essence, that -- that water no longer counts as  
12 project supply, and because the water was used during  
13 the D2 period, when it was actually charged, it forms  
14 part of that curve we looked at, and it -- and -- and  
15 then the water not being charged today forms part of  
16 the gap that I just mentioned. In other words, New  
17 Mexico is -- is essentially charged for effluent --  
18 the lack of effluent being charged in Texas, and,  
19 therefore, it reduces the EBID allocation. New Mexico  
20 bears no responsibility or -- or any connection  
21 whatsoever to that effluent, and it is fundamentally  
22 unfair to charge New Mexico with depletions that are  
23 caused in Texas and Mexico, and more importantly, that  
24 whole principle is contrary to the Compact. Now, if  
25 you believe that any of the departures from D2 are

1 caused by something other than groundwater pumping in  
2 New Mexico, then the only conclusion is that New  
3 Mexico is not receiving its equitable apportionment.  
4 So let's turn to the equitable apportionment, and I'll  
5 separate this discussion into Texas and New Mexico.  
6 So are there any years in which Texas did not receive  
7 its equitable share of project supply, that 43  
8 percent? Well, there's a number of reasons to think  
9 or there's a number of reasons that the technical  
10 evidence in this case will show that Texas was not  
11 harmed. First, the slide you're looking at here goes  
12 to show that New Mexico water use has been remarkably  
13 stable. What you're looking at here is the amount of  
14 water, surface water and groundwater, so it includes  
15 groundwater, that has been applied to each project  
16 acre in New Mexico. Now, you can see dating all the  
17 way back to 1940, that amount has not really changed.  
18 That amount is represented by the black line there,  
19 and it's a hair over three. It looks like in some  
20 years, it might have gone as high as 3.5. Now, that  
21 number under four is significant because as you will  
22 learn, as part of the trial, EP No. 1 actually  
23 allocates, or allots, I should say, 4 acre-feet per  
24 acre as a full supply to its water users, but as you  
25 can see, New Mexico has never gotten near that, and,

1 in fact, the adjudication prevents that from  
2 happening.

3           You can also see from this slide the  
4 impact of surface water supply. So in years of  
5 abundant surface water, the surface water being shown  
6 in the blue lines here, you can see that there's  
7 significantly less irrigation pumping shown by the  
8 gray. But then in those years where there's less  
9 surface water supply, well, now, you have more  
10 groundwater pumping, and that is consistent with the  
11 Compact's purpose of ensuring that the project  
12 survives and that irrigation demands are satisfied.

13           I want to show you another slide here  
14 that helps illustrate the impact of the operating  
15 agreement on how water was applied in New Mexico, and  
16 here you can see the D1/D2 period, the level of  
17 groundwater pumping, that actually dropped during that  
18 period of 1979 to 2005 because there was, as you'll  
19 learn, a full supply during most of those years, but  
20 then once the new methodology for allocating water  
21 came into place, New Mexico farmers were forced to  
22 rely on groundwater, and you can see on the right side  
23 of this figure, the increased groundwater that -- that  
24 had to occur in the State of New Mexico. This forced  
25 farmers, and many against their better judgment, to

1     rely more heavily on groundwater.

2                     And, finally, to finish the thought  
3     about the stability of water use in New Mexico, Texas'  
4     theory about this 1938 depletion limit is based on  
5     this idea that there were increased depletions, but as  
6     you can see from this slide, New Mexico's annual crop  
7     consumption, again, has remained remarkably stable  
8     over the years where it's essentially flat there, at  
9     least as an average. So other reasons that -- to  
10    understand that Texas was not really harmed will be  
11    shown in the next slide. So, first, let me talk about  
12    the concept of -- of full supply. So project water is  
13    divided by Reclamation, and you'll hear that  
14    Reclamation sets those allocations every year and that  
15    those allocations represent the maximum amount that  
16    either district is entitled to in any given year, and  
17    based on the 790,000 acre-feet of water that's  
18    released in a normal supply set by the Compact,  
19    there's a certain amount of water that's allocated  
20    each year as a maximum. It's -- it's essentially a --  
21    a cap there on the amount of water that each district  
22    is entitled to, and that full supply is shown here in  
23    the black line on this slide. The yellow lines show  
24    the amount of supply for EP No. 1. So you can see  
25    from 1985 until 2002, there were full supplies. In

1 other words, the maximum amount that EP No. 1 is  
2 entitled to. There's no dispute on that issue.  
3 You'll hear from multiple witnesses that those years  
4 were full supply. You also see in 2005, there was a  
5 full supply, and I'll mention those other yellow bars  
6 after 2006. In some of those years, EBID received  
7 significantly less than a full supply, but EP No. 1  
8 still not more than a full supply, in part because of  
9 this methodology I mentioned, and in part because of  
10 carryover, which ends up giving significantly more  
11 than an equal amount of water per each acre in Texas.  
12 The other thing that's interesting about this slide is  
13 you can see in the red line here, the amount of water  
14 that was actually charged to, so actually taken by EP  
15 No. 1, and in a number of those years, you can see  
16 that it's significantly less than they had available.  
17 Now, they had all of that water available in storage,  
18 but they chose not to call for it. In other words,  
19 they made a determination unrelated to New Mexico that  
20 they basically didn't need that water. Now, it's hard  
21 to imagine how Texas could have been injured or had  
22 damages in those years. It had a readily available  
23 supply of water that it chose not to take. And you'll  
24 learn that after 2006, so we can see there a line  
25 shown here with the new methodology, Texas has

1 received significantly more than 43 percent of project  
2 supply. Now, the -- another thing to illustrate on  
3 this slide, before moving on, there's only two years  
4 here, 2003 and 2004, in which Texas did not receive  
5 either a full supply or significantly more than 43  
6 percent of -- of project supply, and so due to project  
7 operations, those two years are the only two where  
8 Texas supply could have been reduced by New Mexico  
9 groundwater pumping. Now, as we've explained before,  
10 we'll explain through the course of the trial, we  
11 don't think that even in those years, there was a  
12 Compact violation, because the states have always  
13 allowed groundwater pumping to supplement project  
14 supply. But even under Texas' theory, if you accepted  
15 Texas' theory, the impact to Texas during those years  
16 was only approximately a hundred thousand acre-feet.  
17 So let's turn, now, to the apportionment in -- in New  
18 Mexico. So were there any years in New Mexico -- when  
19 New Mexico did not receive its equitable share? And  
20 here, we think the answer to that question is very  
21 clearly yes. So this figure that you're looking at  
22 has the dotted line set at 57 percent/43 percent for  
23 Texas and New Mexico. The green bars are represent --  
24 represent EBID's allocation, and the orange bars  
25 represent EP No. 1's allocation. You can see here



1 that from 1979 up to 2005, it was, again, remarkably  
2 stable. New Mexico received 57 percent of project  
3 supply, and I'll tell you that Dr. Barroll will  
4 testify, also, that even before the period showing  
5 that, that also was true. You had a period 57/43.  
6 But as you can see, after 2006, that drastically  
7 changes. Now, what we're looking at is the green bars  
8 represent significantly less than 57 percent of  
9 project supply. The orange bars represent  
10 significantly more than 43 percent. You can see it  
11 going up above that dotted line there. And as will be  
12 explained by New Mexico modelers, Mr. Sullivan and  
13 others, since 2006, New Mexico farmers have been  
14 deprived of an average of 94,000 acre-feet of project  
15 water per year. That's 94,000 acre-feet per year.  
16 And that means that during those years, New Mexico  
17 received significantly less than 57 percent. Now, we  
18 heard from Texas, in its opening statement earlier,  
19 that Texas bears no responsibility for this inequity.  
20 I guess the argument is that, sure, Texas receives  
21 more water and New Mexico less and, sure, this might  
22 be a Compact violation, but it's not our fault. But  
23 that argument is not true to the court's established  
24 rules in this area that hold that Texas is  
25 responsible, *parens patriae*, for the actions of its

1 water users, and for Compact compliance, and it  
2 doesn't take into account that Texas receive the  
3 benefits of all of that extra water. And what's more,  
4 it's also true that the operating agreement was  
5 negotiated under the careful watch and participation  
6 of the Texas Compact commissioner and with the  
7 involvement of Texas in some parts of the negotiation.  
8 So that -- that argument simply is not valid. And so  
9 turning to the next slide, we can see that New Mexico  
10 experts have quantified the losses to Mexico in -- in  
11 a couple of different ways. First, the -- what you're  
12 looking at here represents the paper records, the  
13 records from Reclamation, and we've totalled that up.  
14 Dr. Barroll will testify to this at length. And as  
15 you can see, this -- this is simply showing the period  
16 2006 to 2019, and during that period, lands in Texas  
17 were -- had available to them 57 percent of project  
18 supply. That's based on Reclamation's own records.  
19 Meaning New Mexico only had available to it 43 percent  
20 of supply. Now, from the modeling, and there's  
21 reasons to think that the modeling is more accurate  
22 because it takes into the account changes in  
23 operations, the total losses into Mexico -- to New  
24 Mexico have also been calculated, but those have been  
25 calculated at over 1.1 million acre-feet. Now,

1 lawyers are notoriously bad at math, but it's a simple  
2 matter of comparison to see that the claimed loss in  
3 Texas of a hundred thousand acre-feet is significantly  
4 less than the -- the loss to New Mexico of over 1.1  
5 acre-feet, and that loss to New Mexico is growing  
6 every year. Which takes us to the impact of all of  
7 this on -- on New Mexico. Now, New Mexico farmers  
8 will explain that being forced to rely on groundwater  
9 by Reclamation has resulted in additional costs from  
10 pumping costs to well maintenance to adding soil  
11 amendments, and those additional costs in the  
12 aggregate total millions of dollars, and those costs  
13 have been accepted by the U.S. Supreme Court in cases  
14 like Kansas versus Colorado, as -- as appropriate to  
15 award to a state. Worse yet is what is being shown  
16 here in this slide. What we're seeing here are the  
17 groundwater levels in New Mexico represented by a  
18 couple of monitoring wells in the New Mexico portion  
19 of the basin. What you can see in the red line  
20 reflects an equilibrium, and that is in times of low  
21 surface water supply, the groundwater levels dropped.  
22 You see that happening. And then when the surface  
23 water rebounded, then so did the groundwater levels.  
24 And that created a system, as I said, in equilibrium.  
25 But since the operating agreement, what you see on the

1 right-hand side of this figure, is those groundwater  
2 levels in New Mexico are not rebounding, and they may  
3 never re -- rebound, and if those don't recover, that  
4 could have potential long-term implications for the  
5 State of New Mexico for which we are very concerned.  
6 At the end of the trial, we will ask you to, No. 1,  
7 find in New Mexico's favor; No. 2, give clear guidance  
8 that the project must be operated in compliance with  
9 the Compact so that New Mexico receives 57 percent of  
10 project supply; and No. 3, set the remedies phase as  
11 quickly as possible so that New Mexico can seek an  
12 appropriate remedy.

13 Thank you.

14 **JUDGE MELLOY:** Thank you, Mr. Wechsler.

15 Well, we're -- it's 12:50 my time. I  
16 think this is probably a good time to take a break  
17 before we start with our first witness, so let's --  
18 let's take a 20-minute recess, and when we come back,  
19 we'll start with -- and you're going to lead off,  
20 Mr. Dubois?

21 **MR. DUBOIS:** Yes, Your Honor.

22 **JUDGE MELLOY:** Okay.

23 **MR. DUBOIS:** I'll be calling  
24 Ms. Estrada-Lopez.

25 **JUDGE MELLOY:** All right. We'll come

1 back in 20 minutes and take your witness then.

2 **MR. DUBOIS:** Thank you.

3 **JUDGE MELLOY:** Thank you.

4 (Recess.)

5 **JUDGE MELLOY:** All right. Are you ready  
6 to call your witness?

7 **MR. DUBOIS:** Yes, Your Honor.

8 **JUDGE MELLOY:** All right. You may  
9 proceed.

10 **MR. DUBOIS:** The United States calls  
11 Michelle Estrada-Lopez to the stand.

12 **JUDGE MELLOY:** Just a second. Is she --  
13 all I'm getting is a screen with a -- just a second.  
14 Now, Ms. Estrada-Lopez is on the camera, right?

15 **MR. WECHSLER:** She is, Your Honor.

16 **JUDGE MELLOY:** All we're seeing is  
17 slides. Is she screen sharing?

18 **MR. WECHSLER:** That's likely coming from  
19 the tech from the U.S. Jim, you're on mute.

20 **MR. DUBOIS:** Yeah. Sorry about that. I  
21 went back on mute. No. The -- Ms. Estrada-Lopez is  
22 not running a slideshow. One of our paralegals is  
23 running that stuff, and Michelle will just be  
24 testifying.

25 We see the PowerPoint from

1 Estrada-Lopez.

2 JUDGE MELLOY: I'm not even getting the  
3 PowerPoint.

4 MR. WECHSLER: There may be, Your Honor,  
5 if someone from Worldwide is on --

6 TRIAL ADMIN: If you have  
7 Ms. Estrada-Lopez please speak, she should pop up for  
8 you so you can see her.

9 THE WITNESS: This is Michelle.

10 JUDGE MELLOY: All right. Okay. All  
11 right. If you raise your right hand, please. Do you  
12 swear or affirm that the testimony you're about to  
13 give will be the truth, the whole truth, and nothing  
14 but the truth?

15 THE WITNESS: I do.

16 JUDGE MELLOY: All right. For the  
17 record, would you state your name and spell your name,  
18 please?

19 THE WITNESS: Michelle Estrada-Lopez,  
20 M-I-C-H-E-L-L-E, E-S-T-R-A-D-A hyphen L-O-P-E-Z.

21 JUDGE MELLOY: All right. Now,  
22 Ms. Estrada-Lopez, we've agreed that we're going to be  
23 asking each of the witnesses some preliminary  
24 questions, so don't take any offense. You're just the  
25 first one up. Let me ask, is anyone in the room with

1     you?

2                   THE WITNESS:   No.

3                   **JUDGE MELLOY:**   Do you have any materials  
4     that you will be referring to during your testimony?

5                   THE WITNESS:   Just the PowerPoint that's  
6     being displayed.

7                   **JUDGE MELLOY:**   The PowerPoint?   Anything  
8     else?   Do you have any notes or -- or --

9                   THE WITNESS:   Oh, no.

10                  **JUDGE MELLOY:**   -- notebooks or records?  
11     All right.   We would ask that you not access any  
12     computer or any other device that would allow e-mail,  
13     texting, or instant messaging or any other form of  
14     communication, and that if you do have any  
15     communication with the attorneys during your  
16     testimony, that those communications would be on the  
17     record.

18                  Let me ask counsel, anything else you  
19     think we should ask Ms. Estrada-Lopez before we start?

20                  **MR. WECHSLER:**   Not from New Mexico, Your  
21     Honor.

22                  **JUDGE MELLOY:**   All right.

23                  **MR. DUBOIS:**   Not that I'm aware of, Your  
24     Honor.

25                  **JUDGE MELLOY:**   All right.   Then

1 Mr. Dubois, you may start.

2 MR. DUBOIS: Thank you, Your Honor.

3 MICHELLE ESTRADA-LOPEZ,  
4 having been first duly sworn, testified as follows:

5 DIRECT EXAMINATION

6 BY MR. DUBOIS:

7 Q. Good afternoon, Ms. Estrada-Lopez. How are  
8 you?

9 A. Fine.

10 Q. Is it all right if I call you Michelle?

11 A. Yes, it is.

12 Q. All right. Thank you. Michelle, who are you  
13 employed by?

14 A. By the Bureau of Reclamation.

15 Q. Which office?

16 A. The Albuquerque Area Office.

17 Q. Okay. What's the general subject matter that  
18 you've been asked to testify about today?

19 A. An overview of the Rio Grande project and the  
20 water operations as related to allocation and  
21 accounting of the water.

22 Q. All right. Have you testified in court  
23 before?

24 A. No, I have not.

25 Q. Can you please tell the Court about your



1 **educational background?**

2 A. I have a bachelor's of science and master's  
3 of science in civil engineering.

4 **Q. From what university?**

5 A. New Mexico State University.

6 **Q. So both your bachelor's and your master's**  
7 **were from NMSU?**

8 A. Yes.

9 **Q. What was your undergraduate degree?**

10 A. It was civil engineering, master -- bachelor  
11 of science with a focus in water resources.

12 **Q. And did you graduate with any honors?**

13 A. Yes. With highest honors, which is  
14 equivalent to valedictorian at NMSU.

15 **Q. Okay. You also got your master's from NMSU.**  
16 **What was the emphasis of your master's?**

17 A. It was civil engineering with focus in water  
18 resources.

19 **Q. What was the subject matter of your master's**  
20 **thesis?**

21 A. It was looking at Caballo Reservoir  
22 evaporation rates and comparing it to the  
23 evapotranspiration rates of the surrounding  
24 vegetation.

25 **Q. Okay. Let's talk about your employment.**

1 When did you start working for Bureau of Reclamation?

2 A. In June of 2009.

3 Q. So essentially right after you finished your  
4 master's; is that right?

5 A. Yes, it is.

6 Q. Okay. And have you been with Reclamation  
7 ever since you graduated from your master's program?

8 A. Yes, I have.

9 Q. What was your first full-time job with  
10 Reclamation?

11 A. I was an intern in the water operations  
12 group.

13 Q. And when was that?

14 A. From 2009 to 2011.

15 Q. Okay. What was your first full-time job with  
16 -- or permanent job with Reclamation?

17 A. I was converted to civil engineering water  
18 operations group in 2011.

19 Q. And how long were you in that position?

20 A. I was in water operations until 2013.

21 Q. What were your responsibilities with the  
22 water operations group?

23 A. I did hydrologic data collection and  
24 analysis, and my main focus was the Pecos River. I  
25 did the water accounting for the endangered species

1 operations on the Pecos River. I did the -- I was the  
2 backup for water accounting on the San Juan-Chama  
3 Project, and I did daily operations decisions as part  
4 of my role for the Rio Chama, the middle Rio Grande,  
5 and the Pecos River.

6 **Q. What was your -- your next position at**  
7 **Reclamation?**

8 A. I became a project manager.

9 **Q. And what does that mean?**

10 A. I oversaw the program, meaning the budget and  
11 implementation of the program work for Reclamation for  
12 the Rio Grande Project and the Carlsbad project, and  
13 that included --

14 **Q. When did --**

15 A. Oh, sorry.

16 **Q. No, go ahead. Go ahead.**

17 A. That included leaving projects and programs  
18 and purchasing all of the water for the endangered  
19 species program for the Pecos River and then becoming  
20 the allocation committee member for the Rio Grande  
21 Project.

22 **Q. And how long were you a project manager?**

23 A. Until last year.

24 **Q. Okay. What responsibilities did the project**  
25 **manager position entail?**

1           A.    I oversaw the budget and the repayment  
2 contracts for the Rio Grande Project and ensuring the  
3 implementation of the work each year for the full  
4 program, and then for the Rio Grande Project, I became  
5 the allocation committee member so the representative  
6 for Reclamation under the operations agreement.

7           **Q.    Okay.  So you were a representative on the**  
8 **allocation committee from 2013 until the present?**

9           A.    I didn't get assigned to the allocation  
10 committee until after 2013.  I believe it was 2015.

11          **Q.    Okay.  And what's your current position at**  
12 **Reclamation?**

13          A.    I'm the lead civil engineer in the water  
14 operations group.

15          **Q.    You indicated that you've had that position**  
16 **since last year?**

17          A.    Yes.

18          **Q.    All right.  What responsibilities does your**  
19 **current position entail?**

20          A.    I am still the allocation committee member  
21 for the Rio Grande Project.  I work as part of the  
22 water operations team making decisions on releases for  
23 the Rio Grande Project and our reservoirs on the Rio  
24 Chama and the Pecos River.  I review the water  
25 accounting for the Pecos River and San Juan-Chama

1 projects, and then I am responsible for the  
2 developments of the reports from our office to the Rio  
3 Grande Compact Commission and the Pecos River Compact  
4 Commission, as well as doing hydrologic data analysis  
5 for our reservoirs for any projects that are ongoing  
6 in our office that are assigned to me.

7 **Q. Are you familiar with the facilities and**  
8 **operations of the Rio Grande project?**

9 A. Yes, I am.

10 **Q. How did you develop your familiarity with the**  
11 **-- with the -- with the Rio Grande project and its**  
12 **operations?**

13 A. I grew up in Las Cruces, New Mexico, which is  
14 within the Rio Grande project area, then when I was  
15 getting my master's degree, I took a course that was  
16 solely focused on the Rio Grande project, looking at  
17 it from all aspects, including farmers, irrigation  
18 districts, the federal government, and wildlife  
19 entities. My master's thesis was on Caballo, which is  
20 one of two storage reservoirs for the Rio Grande  
21 project, then when I joined Reclamation as an intern  
22 in the water operations group, I started to do some  
23 hydrologic analysis and assignments related to the Rio  
24 Grande project, then when I became a project manager,  
25 I oversaw the Rio Grande project as a whole and became

1 the allocation committee member, and now that I'm back  
2 in water operations, I participate in the decisions of  
3 releases from Elephant Butte and Caballo Reservoir.

4 Q. To lay some basic groundwork, I -- I would  
5 like you to -- to walk the Special Master and Court  
6 through a description of the physical layout of the  
7 Rio Grande project. On the screen, you've got in  
8 front of you a slide which has been marked --  
9 previously been marked Estrada-Lopez Demo, for  
10 demonstrative, 01. Do you have that up in front of  
11 you?

12 A. Yes, I do.

13 Q. All right.

14 JUDGE MELLOY: Mr. Dubois, let me  
15 interrupt for just a second here. One thing I failed  
16 to do when we started with Ms. Lopez --  
17 Ms. Estrada-Lopez's testimony was I think we had  
18 agreed that at the beginning of the -- of each  
19 witness, any exhibits that were going to be used by  
20 that witness and that are designated as an A exhibit,  
21 that is those that can be admitted without further  
22 foundation or testimony, would automatically be  
23 admitted, and I failed to do that. So since you're  
24 going to start using the exhibits now, if -- if I  
25 understand the list correctly, all of the

1 Estrada-Lopez demonstrative exhibits 1 through 37 are  
2 being offered and can be admitted without objection,  
3 so they will be admitted. Estrada-Lopez video clips  
4 1, 2, 3, 4, 5, 6, 7, and 8 can be admitted without  
5 objection and are so admitted. Texas Exhibit 84 is  
6 admitted. United States Exhibit 55 is admitted.  
7 United States Exhibit 116, 367, 436, 458, 511, 512,  
8 and 661 are all admitted. Then for the New Mexico  
9 cross-examination exhibits to which there are no  
10 objections, there are three demonstrative exhibits  
11 numbered New Mexico Demo 2, 3, and 4. They will be  
12 admitted. Colorado Exhibit 214 will be admitted.  
13 Joint Exhibit 206 will be admitted, Joint Exhibit 363,  
14 391, 395, 402, 409, and 428 will be admitted. Joint  
15 Exhibit 439 will be admitted. Joint Exhibit 470 will  
16 be admitted. Joint Exhibit 10 -- excuse me, New  
17 Mexico Exhibit 1055 and New Mexico Exhibit 1061 will  
18 be admitted. New Mexico Exhibit No. 512 will be  
19 admitted. New Mexico 697, New Mexico 2270 -- 2270 --  
20 New Mexico 2373, New Mexico 2464 will all be admitted.  
21 U.S. Exhibit 10, U.S. Exhibit 36, U.S. Exhibit 41,  
22 U.S. Exhibit 46, 47, 54 will be admitted. U.S.  
23 Exhibit 67, 200, 275, US-380, which I understand is  
24 also New Mexico 2265, will be admitted. US-547 and  
25 556 will be admitted. US-561, which is also New

1 Mexico 2394, will be admitted. US-563, 564, 565, 595  
2 will all be admitted.

3 I think that covers all the ones that I  
4 have on the sheets.

5 **MS. KLAHN:** Your Honor, could I ask for  
6 clarification? This is --

7 **JUDGE MELLOY:** Yes.

8 **MS. KLAHN:** -- Sarah Klahn on behalf of  
9 the State of Texas. Some of the exhibits, perhaps  
10 many of the exhibits on New Mexico's cross-examination  
11 exhibit list may not actually be used with  
12 Ms. Estrada-Lopez. There's a lot of exhibits there.  
13 Is it the Court's intention that if there's just zero  
14 objections, that all such exhibits would be admitted?

15 **JUDGE MELLOY:** Yes.

16 **MS. KLAHN:** Okay. Thank you.

17 **JUDGE MELLOY:** All right.

18 **MR. WECHSLER:** One last question, Your  
19 Honor. For those demonstrative exhibits, I assume  
20 it's for demonstrative purposes and not evidentiary  
21 purposes?

22 **JUDGE MELLOY:** Correct.

23 **MR. WECHSLER:** Thank you.

24 **JUDGE MELLOY:** All right. Unless --  
25 unless somebody wants to move their admission for



1     evidentiary purposes and lay the necessary foundation,  
2     but -- but at this point, they're just for  
3     demonstrative purposes only.

4                     All right. Sorry for the interruption,  
5     Mr. Dubois. You may proceed.

6                     **MR. DUBOIS:** That's all right, Your  
7     Honor. Thank you.

8                     **Q. (BY MR. DUBOIS)** Michelle, you have  
9     **Demonstrative Exhibit 01 up on the screen in front of**  
10    **you?**

11                    A. Yes, I do.

12                    **Q. All right. Can you first describe the**  
13    **general location of the Rio Grande River itself?**

14                    A. Yes. If you look at the slide at the inset,  
15    if you zoom in here, we can see that the Rio Grande  
16    begins in southern Colorado. It travels through New  
17    Mexico towards the border with Texas. It crosses the  
18    border several times, and then it becomes the border  
19    between the United States and Mexico, and then it  
20    enters the Gulf of Mexico near Brownsville, Texas.

21                    **Q. Okay. So what is the Rio Grande Project?**

22                    A. The Rio Grande Project is Reclamation's  
23    federal irrigation project.

24                    **Q. All right. Expanding back on to the larger**  
25    **map, can you explain essentially what the project is**

1 and where it's located indicated on the -- on the map  
2 that's Demo 1?

3 A. The Rio Grande Project stores inflow into our  
4 project reservoirs and then delivers water to  
5 irrigation fields in southern New Mexico indicated on  
6 the map in the green cross hatching, and far west  
7 Texas indicated in the pink cross hatching and also  
8 makes a delivery to the country of Mexico.

9 Q. When was the project authorized?

10 A. It was originally authorized as part of the  
11 1902 Act for Reclamation, and then it was expanded  
12 into Texas in 1905.

13 Q. What part of the Rio Grande is within the  
14 boundaries of the Rio Grande Project?

15 A. We can see on the maps, the Elephant Butte  
16 Reservoir starts in the north Sierra County and goes  
17 up into Socorro County and then is part of -- the  
18 lands are in Sierra County and Dona Ana County in New  
19 Mexico and in El Paso County in Texas and stop at the  
20 El Paso County line.

21 Q. Why does the map that is up here, this  
22 Demonstrative No. 1, go through Fort Quitman, Texas?

23 A. So there's two reasons. The Fort Quitman  
24 gaging station is an important gage in the Rio Grande  
25 Compact which is in an affected area, and then also

1 Reclamation's drainage and wastewater is rented to  
2 Hudspeth County Conservation and Reclamation District,  
3 which is in Hudspeth County, Texas, and is indicated  
4 in that pea green color cross hatching.

5 **Q. Is Hudspeth County Conservation and**  
6 **Reclamation District within the project boundaries to**  
7 **the Rio Grande project?**

8 A. It is not.

9 **Q. How many storage reservoirs serve the**  
10 **project?**

11 A. There's two storage reservoirs.

12 **Q. And what are they?**

13 A. Elephant Butte and Caballo.

14 **Q. On Demonstrative 2, can you please indicate**  
15 **the -- the general location of Elephant Butte**  
16 **Reservoir?**

17 A. Yes. You can see on the map, we've bolded  
18 the first blue arrow pointing towards Elephant Butte  
19 Reservoir, which is in the northern part of Sierra  
20 County.

21 **Q. Okay. I'm going to show the Court a short**  
22 **video clip that is from the drone flyover commissioned**  
23 **by Texas. As we play it, can you describe for the**  
24 **Special Master what he is seeing?**

25 A. Yes. Okay. So initially, you can see on the

1 left-hand side of the screen, the yellow arrow  
2 indicating the location of where this video clip is  
3 starting. So we are far south into the reservoir, and  
4 then as the video clip plays, you will pan further  
5 towards the dam and then see the actual facility.  
6 Play the clip, please.

7 (The video was played.)

8 A. Okay. So it pans up to the north, and we can  
9 see that the reservoir is quite low, and we can tell  
10 this by the change in color in the surrounding lands.  
11 The lighter color indicates where water used to be  
12 stored for the reservoir. Now, it's going to rotate  
13 slightly, and then we'll be headed towards the  
14 facility, which is Elephant Butte Dam. Oh, it's going  
15 to pan back north real quick. Okay. As we turn, we  
16 can see the Elephant Butte, which is the large land  
17 mass there and the marinas here at Elephant Butte,  
18 then it turns, and if we can pause here. So this is  
19 the upstream face of Elephant Butte dam, which is --  
20 we saw on the tour with the Special Master, and we can  
21 see that coming out of the dam in this video still,  
22 you can see the Rio Grande coming out, and that would  
23 be indicated by the vegetation line that's kind of  
24 sinuous coming towards the north of the screen.

25 Play the clip, please.

1 (The video was played.)

2 A. Okay. So, now, we've switched to the other  
3 side of the dam. This is called the downstream face  
4 of the dam, and you can see the marina and Elephant  
5 Butte in the background of the reservoir, and we can  
6 see our facility and the building in the lower  
7 right-hand corner, this is our power plant. This is  
8 where the water from Elephant Butte is released  
9 through to generate power. Most of the water that we  
10 release goes through this power plant.

11 MR. DUBOIS: Is that the end of the  
12 clip?

13 MR. ALLISON: Yes.

14 MR. DUBOIS: All right. Thank you.  
15 Next slide, please.

16 Q. (BY MR. DUBOIS) Michelle, on the screen is  
17 what has been marked as Estrada-Lopez Demonstrative  
18 No. 3. Can you tell the Special Master, what's the  
19 source of these photos?

20 A. These are Reclamation photographs.

21 Q. All right. And what do these two photographs  
22 show?

23 A. These are both aerial photographs of Elephant  
24 Butte dam. The one on the left is looking north and  
25 east. You can see the Rio Grande coming off to the

1 right-hand side of the still, and then on the  
2 right-hand photograph, we're looking at the downstream  
3 face of the dam with the reservoir in the background  
4 and the Rio Grande in the foreground. If we zoom in,  
5 we can actually see in this photograph water is being  
6 released to the river, and the white area in the Rio  
7 Grande, that is the water coming through the power  
8 plant and being released downstream. The concrete  
9 structure to the left of the river connected to the  
10 dam, that is one of the spillways for the dam.

11 **Q. How big is Elephant Butte Reservoir?**

12 A. It can hold about 2 million acre-feet.

13 **Q. And when was it completed?**

14 A. The initial construction was completed in  
15 1916.

16 **Q. Can you describe the functions of Elephant**  
17 **Butte Reservoir?**

18 A. The primary function of Elephant Butte  
19 Reservoir is to store the water delivered by New  
20 Mexico for the Rio Grande Project. We also have flood  
21 control storage at this facility, and we can store  
22 other types of water, which we call accounts. One of  
23 them is San Juan-Chama project water, and the other  
24 type is Rio Grande Compact credit water for New Mexico  
25 and Colorado.

1           Q.    All right.  And you've also said that there's  
2   a power generation facility in the project?

3           A.    Yes.

4           Q.    How does the timing and rate of release for  
5   power production compare to the timing and rate of  
6   release needed for irrigation?

7           A.    So irrigation releases need to be quite  
8   variable as the crop demand changes and hydrologic  
9   conditions change in the basin.  As for power  
10   production, it needs to be steady so that we can  
11   market that power.  So when we make releases out of  
12   Elephant Butte, they are much more steady than is  
13   needed for an irrigation release.

14          Q.    And how are the competing demands for the --  
15   for the timing of release between power production and  
16   irrigation reconciled?

17          A.    Reclamation has a storage facility just  
18   downstream of Elephant Butte dam, and as the water  
19   from Elephant Butte dam is released at a steady rate,  
20   it is captured in Caballo dam, and at Caballo dam is  
21   where we make the daily or marked adjustments for  
22   irrigation releases.

23          Q.    Okay.  Next slide, please.  Going back to  
24   what has been marked as Estrada-Lopez Demonstrative  
25   No. 4, can you use this map to indicate to the Special

1     **Master where the location of the Caballo dam is**  
2     **relative to the rest of the system?**

3         A.     Yes.   So on the map, we've bolded the second  
4     blue arrow pointing towards the location of Caballo  
5     Reservoir, and you can see it is just downstream of  
6     Elephant Butte reservoir and still in Sierra County,  
7     New Mexico.

8         **Q.     About how many river miles is Caballo**  
9     **downstream from Elephant Butte?**

10        A.     I believe it's 15 to 20.   I don't recall.

11        **Q.     All right.   I'm going to have another short**  
12     **video clip played.   Again, this is from the -- the**  
13     **drone flyover commissioned by Texas and taken, I**  
14     **believe, in August of 2021.   Is -- I believe, isn't**  
15     **that what is -- is that what is indicated in the upper**  
16     **right-hand corner of the -- of the video?**

17        A.     Yes.   That's what it says.

18        **Q.     Okay.   All right.   Thank you.   So if you**  
19     **would describe for the Special Master what he is**  
20     **seeing as we play this clip, please.**

21        A.     So this clip, we are facing south, and we are  
22     starting in the bottom portion of the Caballo  
23     reservoir.   It's going to fly towards the Elephant --  
24     the Caballo dam.   Play the clip, please.   Thank you.

25                   (The video was played.)



1           A.     So as we are moving closer to the dam, you  
2     can tell that Caballo Lake is much shallower than  
3     Elephant Butte because you can start to see some of  
4     the land forms beneath the water. As we come closer  
5     to the dam, you'll see it's this linear structure that  
6     we can start seeing. Can you pause real quick? Thank  
7     you. So the body of water is Caballo Lake, Caballo  
8     reservoir in the foreground, and in the background,  
9     you can see a water feature that is the Rio Grande,  
10    and that is the water being delivered to the Rio  
11    Grande project entities. As we move closer, you're  
12    going to see the water is all diverting to the  
13    left-hand side of the upstream, so we'll see where the  
14    gates are. We're going to rotate around. So, now,  
15    everything is on the top, but when we rotate all the  
16    way around, the releases are on the right-hand side of  
17    the dam. The concrete structure, that's the spillway,  
18    but where the water is coming out for the releases is  
19    this triangle-looking area between the concrete  
20    structure and the rest of the dam. That's where the  
21    releases are being made to the river. The white line  
22    at the toe of the dam, that is Bonita Pipe. We saw  
23    this on the tour with the Special Master, and this is  
24    where water is delivered to the Bonita lateral. If we  
25    can zoom in on the lower left-hand part of the screen,

1 so if the Special Master recalls, when we were at  
2 Bonita lateral, we saw the concrete structure in  
3 Bonita lateral and then we saw part of the structure  
4 going back towards the Rio Grande. This is the  
5 wasteway, and this is actually showing water being  
6 sent back to the Rio Grande in -- at this time is  
7 where that white water is coming out from the -- the  
8 vegetation area. We can finish the clip if there's  
9 any more.

10 Q. (BY MR. DUBOIS) Okay. I believe that's it.

11 A. Okay.

12 Q. All right. Next slide, please. Michelle,  
13 you've now got on the screen what has been marked as  
14 Estrada-Lopez Demo 05. What's the source of these  
15 photos?

16 A. These are Reclamation photographs.

17 Q. And can you explain to the Special Master  
18 what these are showing you?

19 A. These are both aerial photographs from the  
20 downstream side of the dam and facing the reservoir,  
21 so the larger body of water in the background, that is  
22 Caballo Lake. The body of water coming out of the  
23 dam, that is the Rio Grande. We can see by the white  
24 coloring of the water near the toe of the dam, that  
25 water is being released at this time for downstream

1 use.

2 Q. Okay. How big is Caballo reservoir?

3 A. About 350,000 acre-feet.

4 Q. And what are the functions of Caballo  
5 reservoir?

6 A. Caballo reservoir, as I explained earlier,  
7 restores the water that has been released from  
8 Elephant Butte for the Rio Grande project. It also  
9 collects water from a large amount of arroyos that  
10 come into the Rio Grande at this location so it stores  
11 that water, and it also has flood control purposes  
12 because of those arroyos.

13 Q. How does Reclamation measure the outflows  
14 from Caballo reservoir?

15 A. Reclamation has the Caballo gaging station --

16 Q. Next slide, please.

17 A. -- which is about a mile downstream from  
18 Caballo dam.

19 Q. On the screen is what has been marked  
20 previously as Estrada-Lopez Demo 06. Can you --  
21 what's the source of these pictures?

22 A. These are Reclamation photographs.

23 Q. All right. And can you describe for the  
24 Special Master what is shown in these photographs?

25 A. Yes. On the left-hand photographs, both the

1 top and bottom, these are taken from the east side of  
2 the bank where the gaging station is. On the lower  
3 photograph, you can see our instrumentation that is at  
4 the site and where that is stored and housed. The  
5 upper photograph, we can see one of our employees is  
6 actually taking a measurement of the velocity in order  
7 to compare it to the instrumentation that is  
8 instantaneously and continuously taking measurements.  
9 On the right-hand photograph, we're on the other side  
10 of the bank, so the west side of the bank, and this is  
11 right near where we stopped on the tour with the  
12 Special Master. So we're looking across the river,  
13 and you can even see the -- it looks white, but the  
14 pipe that's in the left-hand side coming out of the  
15 river, we can see it across the way on that side.

16 **Q. Is that the same pipe with the kind of**  
17 **conical hat that's in the lower left picture?**

18 A. Yes, it is.

19 **Q. And what is that structure?**

20 A. So we use corrugated pipes to protect our  
21 instrumentation and instrumentation that is measuring  
22 within that.

23 **Q. All right. And the Special Master did see**  
24 **this gaging station on the basin tour?**

25 A. Yes. And he was able to see one of the

1 district employees taking a measurement at that time.

2 Q. Is this the only gage maintained by  
3 Reclamation below Elephant Butte reservoir?

4 A. Yes. Well, the only river gage.

5 Q. Thank you. Who else has flow measurement  
6 instrumentation at this site?

7 A. The irrigation district.

8 Q. Do each of the irrigation districts have  
9 measurement instruments at this site?

10 A. I believe so, yes.

11 Q. Where's the water released from Caballo  
12 reservoir delivered to?

13 A. It is delivered downstream at diversion dams  
14 and every diversion points.

15 Q. What's the difference between a storage dam  
16 and a diversion dam?

17 A. A storage dam is quite large with the  
18 intended purpose of storing water for at least some  
19 period of time, so it can be released later when it's  
20 needed for irrigation. A diversion dam is a structure  
21 across the river, as well, but it's much smaller with  
22 the intended purpose of backing the water up to create  
23 pressure or head, so that that water can be diverted  
24 off of the river by gravity into the distribution  
25 systems for delivery to the farms.

1           **Q.     How many diversion dams does the Rio Grande**  
2 **project have on the Rio Grande?**

3           **A.     We are currently delivering to five diversion**  
4 **dams.**

5           **Q.     Next slide, please. We've come back to the**  
6 **map. This one is marked as Estrada-Lopez Demo 07.**  
7 **Can you indicate on this map the northernmost and most**  
8 **upstream of the diversion dams in the Rio Grande**  
9 **project?**

10          **A.     Yes. The bolded green arrow on the map is**  
11 **pointing in a location of Percha Diversion Dam, and we**  
12 **can see it's just downstream of Caballo dam.**

13          **Q.     What part of the basin -- can you show on the**  
14 **map what part of the basin is served by diversions**  
15 **from the Percha Diversion Dam?**

16          **A.     Yes. On the screen, we can see green cross**  
17 **hatching indicating the lands for the project in New**  
18 **Mexico. The upper portion that starts about the**  
19 **location of Percha Diversion Dam and then goes through**  
20 **and then pinches back in together, that's Selden**  
21 **Canyon, so that's the location that's known as the**  
22 **Rincon Valley, and it's in both Sierra County and Dona**  
23 **Ana County in New Mexico.**

24          **Q.     Next slide, please. Next slide has been**  
25 **marked Estrada-Lopez Demonstrative Exhibit 8. Can you**

1 tell me the source of these photographs?

2 A. Yes. These are Reclamation photographs.

3 Q. Okay. Can you explain to the Special Master  
4 what is shown on these photographs?

5 A. Yes. The right-hand photograph is taken from  
6 the site looking at the downstream face and facing up  
7 -- and shooting upstream. You can see water coming  
8 through the gates. On the left-hand photograph, we  
9 have an aerial photograph, and we can see the -- the  
10 dam is spanning the river, and then on the left-hand  
11 side of the river, we have two gates. This is where  
12 the head or the pressure buildup behind the dam is  
13 regulated, that way it can divert water on both sides  
14 of the river. To the left, we have the Arrey Canal,  
15 which is the main canal for the Rincon Valley for the  
16 Percha section, and to the right, we have the Percha  
17 lateral. We can also see water coming over the top of  
18 the diversion dam and through the gates.

19 Q. I'm going to show the Court another short  
20 clip from the Texas drone flyover. Can you explain to  
21 the Special Master what he is seeing in this video as  
22 it plays, please?

23 A. Yes. So in the still right before the video  
24 plays, we can already see in the upper left-hand  
25 corner of the video is the Arrey Canal. So this is

1 the canal, I guess, indicated on the previous  
2 photograph. So when it plays, we are going to be  
3 looking downstream, so the Arrey is coming off to the  
4 right. We can go ahead and play.

5 (The video was played.)

6 A. Okay. So we can see the gates, and we can  
7 see there's no water in the Arrey Canal. All the  
8 water is going downstream in the Rio Grande. We can  
9 see the Percha lateral off to the left and the upper  
10 fields of the Rincon valley are shown in here.

11 **Q. (BY MR. DUBOIS) Does the Percha dam move**  
12 **water to both sides of the Rio Grande?**

13 A. Yes, it does.

14 **Q. Does the Arrey Canal move water to both sides**  
15 **of the Rio Grande?**

16 A. Yes, it does.

17 **Q. How does that happen?**

18 A. The -- there are siphons for the canal that  
19 take it underneath the -- the Rio Grande and over to  
20 the other side.

21 **Q. And what is a siphon?**

22 A. It is a structure that takes the water from  
23 the canal and then underneath the river and then the  
24 canal comes back open on the other side.

25 **Q. Approximately -- approximately how many acres**



1 are irrigated by the diversions from the Percha  
2 Diversion Dam?

3 A. There's about 12,000 acres.

4 Q. Next slide, please. Using the next slide,  
5 which has been marked as Demonstrative 9, can you use  
6 this slide to tell the Special Master what the next  
7 diversion dam in the Rio Grande project is and where  
8 in the relative location of that dam?

9 A. Yeah. So the second arrow has been bolded,  
10 the green arrow, pointing to the location of the  
11 Leasburg Diversion Dam, and we can see from the map  
12 that this is on the downstream side of Selden Canyon,  
13 so this is the northern point of, but is called the  
14 Mesilla Valley.

15 Q. Can you indicate on Slide 9 what part of the  
16 basin is served by diversions from the Leasburg  
17 Diversion Dam?

18 A. Yes. If you can see the purple triangle  
19 that's marked Mesilla Diversion Dam and then kind of  
20 go across to the green note for the Mesilla valley,  
21 from there up to Leasburg Diversion Dam, that's the  
22 approximate location of the fields that are served by  
23 the Leasburg diversion.

24 Q. I'm going to show the Court another clip from  
25 the drone flyover. Would you explain to the Special

1     **Master what he is seeing in this video clip?**

2           A.     Yes.    So we're starting looking north so  
3     towards Selden Canyon, and it's going to pan around,  
4     and then we'll see the Leasburg Diversion Dam.    So  
5     we're coming down the Rio Grande, rotating, now we're  
6     facing downstream and we can see the Leasburg  
7     diversion structure.    You can pause there.    Thank you.  
8     You can see the entirety of the Rio Grande is shifting  
9     over towards the left-hand side of the video clip.  
10    That's because this is the location of the gates.   The  
11    gates to the Rio Grande below Leasburg are on this  
12    side, as well as the gates to the Leasburg main canal,  
13    which is the body of water we can see coming off and  
14    starting to parallel the Rio Grande.    You can play the  
15    clip, please.

16                       (The video was played.)

17           A.     Okay.   So we can see that there's water going  
18    into the Rio Grande below the dam and into the  
19    Leasburg main canal, so we're paralleling both of the  
20    facilities, the Rio Grande and the Leasburg main  
21    canal.   As we come further down, we are going to see  
22    an interesting structure.   We can pause right here,  
23    maybe a little further.   No, that's probably fine.  
24    Okay.   So we can see in the main canal, we can see a  
25    structure.   This is a check structure, and what it

1 does is we can kind of see an indication of water  
2 coming back towards the Rio Grande. So at this  
3 location, water is backed up, and it can be sent out  
4 to the Rio Grande. It's called a wasteway.

5 **Q. (BY MR. DUBOIS) What is the wasteway used**  
6 **for at this point?**

7 A. The primary purpose of wasteways is to help  
8 with the operation and maintenance of the canal  
9 system. So at this location, when we're diverting --  
10 when water is being diverted into the Leasburg main  
11 canal, it's taking a lot of sediment and debris with  
12 it. At this point, they can back the water up and  
13 send the sediment with some water back to the Rio  
14 Grande, so that reduces the maintenance in the lower  
15 part of the canal system.

16 **Q. Michelle, the next slide has been marked**  
17 **Estrada-Lopez Demonstrative 10. Can you please tell**  
18 **the Court what the source of these pictures are?**

19 A. Yes. These are Reclamation photographs.

20 **Q. All right. And can you explain to the**  
21 **Special Master what's shown in these photographs?**

22 A. On the right-hand side we have an  
23 on-the-ground photo looking upstream. You can see the  
24 large rock on the right-hand side of the photograph  
25 and water coming over the top of the dam. The gates

1 are just off of the photograph to the right. In the  
2 left-hand photograph, this is an aerial view. We can  
3 get a better understanding of the function of the  
4 facility. We can see that the facility is scanning  
5 the entirety of the river here. On the right-hand  
6 side of that large rock, we can see water coming  
7 through the gates into the Rio Grande downstream, and  
8 then we can see water moving off to the right. It's  
9 hard to see because of the vegetation, but that's the  
10 heading of the Leasburg main canal.

11 Q. Did the Special Master see the Leasburg  
12 Diversion Dam or the Leasburg canal heading on the  
13 basin tour?

14 A. No, he did not.

15 Q. Okay. What canal does the Leasburg diversion  
16 divert water into?

17 A. To the Leasburg main canal.

18 Q. And approximately how many acres are  
19 irrigated under the Leasburg main canal?

20 A. There's approximately 30,000 acres.

21 Q. All right. Moving downstream, next slide,  
22 please. Can you use what has been marked as  
23 Estrada-Lopez Demonstrative 11 to indicate the next  
24 diversion dam in the system and its relative location  
25 for the Special Master?

1       A.    Yes.  The bolded green arrow, which is the  
2   third green arrow, and the first pink arrow that is  
3   bolded and pointing towards the location of the  
4   Mesilla Diversion Dam.

5       Q.    Okay.  And backing up to the map a little  
6   bit, can you explain -- go back to the full map.  Can  
7   you explain to the Special Master what portion of the  
8   basin is irrigated under the diversions from the  
9   Mesilla Diversion Dam?

10      A.    Yes.  The lower Mesilla Valley is irrigated  
11   from here, which starts at approximately the location  
12   where the Leasburg Diversion Dam area ceases, which is  
13   between that Mesilla Valley and Mesilla Diversion Dam  
14   and then all of that land that is in the green cross  
15   hatching plus that small amount of land that is in the  
16   pink cross hatching, that is the Mesilla Valley, but  
17   it is in the State of Texas.

18      Q.    Next slide, please.  Can you -- can you -- on  
19   the screen is what's been marked as Estrada-Lopez Demo  
20   12, and what's the source of the photographs on this  
21   slide?

22      A.    These are Reclamation photographs.

23      Q.    All right.  And can you describe to the  
24   Special Master what is shown by these photographs?

25      A.    Yes.  On the right-hand side, this is an

1 on-the-ground photograph looking at the downstream  
2 side of the Mesilla Diversion Dam, and it's from the  
3 west side of the bank or the left-hand of the  
4 downstream side. On the left photograph, this is an  
5 aerial photograph, and it gives us an indication of  
6 how the facility functions. We can see, again, that  
7 it spans the river. This one also can divert water on  
8 both sides of the river. We can see off to the left  
9 of the photograph, that is the west side canal. Off  
10 to the right of the photograph is the east side canal  
11 and the Del Rio lateral, and what we can't see, which  
12 is just north or on the top of this photograph, the  
13 Mesilla Diversion Dam can back water up enough so that  
14 water can be taken by the California extension, which  
15 is the lower portion that is typically watered from  
16 the Leasburg Diversion Dam.

17 **MR. WECHSLER:** Your Honor, I have no  
18 objection, but I'm wondering if I could ask Mr. Dubois  
19 to just ask the witness if she knows when these  
20 photographs were taken.

21 **MR. DUBOIS:** I certainly can, Your  
22 Honor.

23 **Q. (BY MR. DUBOIS) Ms. Estrada-Lopez, do you**  
24 **know when these two photographs were taken?**

25 **A.** All of the aerial photographs from

1 Reclamation were taken, I believe it was in 2018,  
2 during a helicopter tour that was specifically  
3 contracted for Reclamation to take photographs of its  
4 facilities, and the one on the right was taken by  
5 myself during one of my trips. I don't recall which  
6 one.

7 MR. WECHSLER: Thank you.

8 Q. (BY MR. DUBOIS) Was that -- was that -- was  
9 that helicopter trip to take pictures of the  
10 facilities, was that in relation to this case?

11 A. No. We have it done for all of the  
12 Albuquerque office projects.

13 Q. All of the which projects? I'm sorry.

14 A. The ones under the Albuquerque office.

15 Q. Oh.

16 A. It was just for our --

17 Q. Thank you.

18 A. -- use.

19 Q. All right. And am I correct that the -- that  
20 it -- in the left-hand photo, you've got sort of some  
21 white areas below the dam in four different places; is  
22 that correct?

23 A. Yes.

24 Q. So it appears that -- does -- is it correct  
25 that the Mesilla dam has more gates built into it for

1 releasing water to the Rio Grande?

2 A. Yes. Each of those rectangular dark spots is  
3 a gate that can be adjusted.

4 Q. Okay. I'm going to play -- well, a couple  
5 more questions, and then I'll play the video clip.  
6 What canals does the Mesilla Diversion Dam divert  
7 water into?

8 A. The west side canal, the east side canal, the  
9 Del Rio lateral, and the California extension.

10 Q. And approximately how many acres are  
11 irrigated by the water diverted for the Mesilla  
12 Diversion Dam?

13 A. About 40,000 acres.

14 Q. Okay. Next clip, please. I'm going to play  
15 another clip from the -- from the drone flyover, and  
16 if you would explain to the Special Master what he is  
17 seeing as this clip plays, I'd appreciate it.

18 A. Yes. So as we're starting, we are looking  
19 downstream, so downstream or south is going to the top  
20 of the clip and then north is going to the bottom. We  
21 can see on the right-hand side, that is the west side  
22 canal, and on the left-hand side, we see the east side  
23 canal and Del Rio laterals. You can play the clip.

24 (The video was played.)

25 A. So as the clip moves forward, you just get a



1 better shot of the water that is being passed  
2 downstream into the Rio Grande. It's that  
3 whitish-colored water that is moving down, and then  
4 we're going to travel the west side canal and the Rio  
5 Grande, which is on the left-hand side. We just can  
6 see that there's vast amounts of acreage that is in  
7 this portion of the valley.

8 Q. (BY MR. DUBOIS) Okay. Approximately how  
9 many acres did you say were irrigated by diversions  
10 from the Mesilla canal -- the Mesilla Diversion Dam?

11 A. About 40,000.

12 Q. Okay. Are the lands irrigated by the Mesilla  
13 Diversion Dam located in both New Mexico and Texas?

14 A. Yes, they are.

15 Q. And how -- and are the diversions to each  
16 state tracked by the irrigation districts?

17 A. Yes. There's gages on the project facilities  
18 that are indication of how much water is delivered  
19 across the state line through the distribution  
20 facilities.

21 Q. Are the Percha, Leasburg, and Mesilla  
22 diversion dams all located in New Mexico?

23 A. Yes, they are.

24 Q. Who operates the Percha, Leasburg, and  
25 Mesilla diversion dams?

1       A.     They're operated by Elephant Butte Irrigation  
2     District, or EBID.

3       **Q.     Did the Bureau of Reclamation ever operate**  
4     **these diversion dams?**

5       A.     Yes, we did.

6       **Q.     When did Reclamation stop operating these --**  
7     **these three diversion dams?**

8       A.     In the late 1980s.

9       **Q.     All right. Next slide, please. On what has**  
10    **been marked Estrada-Lopez Demo 13, can you indicate or**  
11    **-- or the slide to the Special Master the name and**  
12    **relative location of the next diversion dam within the**  
13    **Rio Grande Project?**

14    A.     Yes. The bolded pink arrow, the second  
15    arrow, is pointing to the location of the American  
16    Diversion Dam, and it is in the -- what is known as  
17    the El Paso Narrows, so the Mesilla Valley ends and  
18    then we're transitioning to the El Paso Valley.

19    **Q.     What part of the Rio Grande Basin is served**  
20    **by the American Diversion Dam?**

21    A.     The rest of the EP1 lands, or El Paso County  
22    Water Improvement District lands, that's indicated on  
23    this map by the pink cross hatching, so the larger  
24    area is in the El Paso Valley, and that's what's  
25    watered by the water that's diverted at American

1 Diversion Dam.

2 **Q. Next slide, please.**

3 **JUDGE MELLOY:** Mr. Dubois, can I get  
4 clarification on one thing if I could? Did I  
5 understand you to say, Ms. Estrada-Lopez, that there  
6 is a gage that measures the amount of water that  
7 crosses over into Texas from -- from New Mexico that  
8 comes from the Mesilla Diversion Dam.

9 **THE WITNESS:** Yes. We have -- the  
10 irrigation districts have gages in the project  
11 facilities at certain locations, and it doesn't --  
12 because the state line wiggles back and forth a lot,  
13 it's not every single crossing, but it has been  
14 determined that these three sites are an approximation  
15 of the volume of water that is going to the Texas  
16 lands.

17 **JUDGE MELLOY:** And do I understand  
18 correctly that there are gages also at each of the  
19 diversion dams that measure the amount of water that's  
20 diverted into the various canals and laterals?

21 **THE WITNESS:** Yes. That's correct.

22 **JUDGE MELLOY:** Okay. All right. Thank  
23 you.

24 **MR. DUBOIS:** Thank you, Your Honor.

25 **Q. (BY MR. DUBOIS) Michelle, looking at**

1     **Estrada-Lopez Demonstrative 14, do you know the source**  
2     **of these pictures?**

3         A.     Yes.   These are also Reclamation photographs.

4         **Q.     And do you know when these were taken?**

5         A.     The one on the right was during the  
6     helicopter tour that I mentioned, and the one on the  
7     left was taken by myself, and I don't recall which  
8     time I took it.

9         **Q.     Which time to the American Dam?**

10        A.     Yeah.   I've been there many times.

11        **Q.     Okay.   Thank you.   All right.   Can you**  
12     **describe to the Special Master what is shown on these**  
13     **two photographs?**

14        A.     Yes.   On the left-hand side of this is a  
15     photograph taken on the ground at American Diversion  
16     Dam.   It is facing upstream.   You can see in the  
17     background, the railroad bridge crossing the river.  
18     The body of water in the background, that is the Rio  
19     Grande coming down into the El Paso Narrows, and the  
20     water in the foreground, that is water that's going  
21     into the American Canal heading.   On the right-hand  
22     photograph, we have the aerial photograph so this is  
23     the opposite direction so we're facing downstream.   So  
24     from the north looking south.   We can see the American  
25     Diversion Dam spanning the Rio Grande.   There -- in

1 this -- when this photograph was taken, you can see  
2 that there is water in the Rio Grande below the dam,  
3 and by the white color indicated near the left-hand  
4 side of the Rio Grande, that's telling me that water  
5 is going through those gates and being delivered down  
6 the Rio Grande. Off to the left, we see a body of  
7 water. That is the American Canal, and we can see in  
8 the background, that is the country of Mexico. To the  
9 left, that is El Paso County in Texas, and in the  
10 bottom right-hand corner, that is in New Mexico.

11 **Q. So the large municipality that has sort of**  
12 **been the center background of -- of this photograph,**  
13 **what city is that?**

14 A. That's Ciudad Juarez.

15 **Q. Thank you. I'm going to show the Court**  
16 **another short video clip, and I'd like you to tell the**  
17 **Special Master what he is seeing as we -- as we view**  
18 **this clip, please.**

19 A. So at the start of this clip, we're looking  
20 north. We can see the two railroad bridges that we  
21 see in the background of the previous photo. It's  
22 going to pan around and start facing the diversion  
23 dam. Let's play the clip.

24 (The video was played.)

25 A. Okay. So we're panning around and coming

1 down the Rio Grande. It's going to spin around again.  
2 So, now, we're going to be facing downstream, or  
3 south, and this is where we can pause. Go back a few  
4 seconds.

5 **Q. (BY MR. DUBOIS) Do you need --**

6 A. Thank you.

7 **Q. There we go.**

8 A. So, again, from this vantage point, you can  
9 see the diversion dam crossing the entirety of the Rio  
10 Grande, water being diverted, and appears at this  
11 point in time all of the water in the Rio Grande is  
12 being diverted into the American Canal, and no water  
13 is being delivered downstream to the Rio Grande.

14 **Q. Is that the end of the clip? Go ahead and**  
15 **play the clip.**

16 **(The video was played.)**

17 A. Okay. So we can see the likeness in the  
18 water that's indicating the water moving into the  
19 American Canal, then the American Canal parallels the  
20 Rio Grande in this portion and then we'll see it  
21 disappear for us because of the roadway that is in  
22 this area.

23 **Q. (BY MR. DUBOIS) What canal does the American**  
24 **Diversion Dam divert water into?**

25 A. Into the American Canal, which is eventually

1 going to deliver to the heading of the Franklin Canal  
2 and through the American Canal extension to the  
3 heading of the Riverside Canal.

4 **Q. The heading -- is the heading of the**  
5 **Riverside Canal on the Rio Grande River?**

6 A. No. It is off the river.

7 **Q. All right. And approximately how many acres**  
8 **are irrigated by the -- by the American Canal system**  
9 **from the -- to American Dam?**

10 A. The rest of EP1, which is about 50,000 acres.

11 **Q. Who operates the American Dam?**

12 A. The International Boundary and Water  
13 Commission, or IBWC.

14 **Q. Has Reclamation ever operated the American**  
15 **Dam?**

16 A. No, we have not.

17 **Q. And can you please explain to the Special**  
18 **Master how diversions at the American Dam operate?**

19 A. Yes. All of the water in the Rio Grande  
20 upstream of American Diversion Dam is diverted into  
21 the American Canal, except for the water needed to  
22 make the delivery to Mexico or if the volume of water  
23 is greater than that, that the American Canal can  
24 hold, then that water is passed to the Rio Grande.

25 **Q. Is that different than how the prior dams**

1     **that you've described operate?**

2         A.     Yes, it is.

3         **Q.     In what way?**

4         A.     At the upstream facilities, the diversions  
5     are made related to the orders needed for irrigation.

6         **Q.     Okay. Does the American Dam divert only that**  
7     **water that EP1 requested from the project?**

8         A.     No, it does not.

9         **Q.     Okay. All right. Can you -- next slide,**  
10     **please. Can you indicate on what has been marked**  
11     **Estrada-Lopez Demo 15, the location of the next**  
12     **diversion dam in -- on the -- on the Rio Grande?**

13         A.     Yes. This is the fifth diversion dam and the  
14     last diversion dam that we currently deliver to, and  
15     it's located where this darker bolded gray arrow is  
16     pointing, and then it is known as the International  
17     Diversion Dam.

18         **Q.     Next slide, please. The next slide I've put**  
19     **up has been marked Estrada-Lopez Demo 16. Can you --**  
20     **what's the source of these two photographs?**

21         A.     These are Reclamation photographs from the  
22     helicopter tour.

23         **Q.     And the helicopter tour was what year?**

24         A.     I believe it was 2018, but I'm not sure.

25         **Q.     All right. And can you describe what's shown**



1     **on Demonstrative Slide 16?**

2           A.     Yes.   So these are both aerial photographs.  
3     The one on the left is looking north, and the Rio  
4     Grande upstream is in the background, and then we can  
5     see on the right-hand side kind of in the center of  
6     the photograph, that is part of the American Canal  
7     that we saw earlier being diverted into American  
8     Diversion Dam instead of parallel the river.   Here it  
9     comes back out where we can see it again.   Then the  
10    diversion dam is the structure that's crossing the Rio  
11    Grande, and we can see that there are four gates there  
12    that can release water downstream into the bed of the  
13    Rio Grande, but we can see there's not much water in  
14    the Rio Grande at this location.   If we look on the  
15    American Canal, you can see it's widened in spots.  
16    This is how they can manage the sediment in the  
17    American Canal before it's being delivered into the  
18    Franklin Canal heading and the American Canal  
19    extension.   The larger concrete structure that crosses  
20    American Canal, that is sending storm water from the  
21    urban area across the American Canal and into the Rio  
22    Grande, and then we can see two gates at the bottom  
23    end of this, and that is where we can send our -- they  
24    can send water back to the Rio Grande for operational  
25    needs from the American Canal.

1           Q.    Okay.  We're going to show you -- I'm sorry.  
2   Go ahead.

3           A.    I was just going to say if we could go to the  
4   other slide, so I can show --

5           Q.    Yes.

6           A.    -- the rest of how it works.

7           Q.    Yes.

8           A.    Okay.  So, now, we are looking at the  
9   diversion dam from the Mexican side, and we can see  
10   we're upstream of the dam, and it's crossing the  
11   river.  What we could see in this one that we couldn't  
12   see in the other is if we look in the bottom lower  
13   right-hand corner, we can see a body of water.  This  
14   is the Acequia Madre, which is the main canal for  
15   Mexico diversion.  It's actually diverted underneath  
16   this roadway over near the Rio Grande, and it goes  
17   under this roadway, and then now we can see it on the  
18   other side of the roadway.

19          Q.    Anything else you'd like to mark on this  
20   picture?

21          A.    No.

22          Q.    Okay.  I'm going to show the Special Master  
23   another short video clip from the Texas drone flyover.  
24   As this plays, can you tell the Special Master what he  
25   is seeing in this clip?

1           A.     Yes.    So we're facing upstream, so towards  
2     the north.   We can see the Rio Grande is the body of  
3     water on the left, and the American Canal is the  
4     browner body of water on the right.   Play the clip,  
5     please.

6                     (The video was played.)

7           A.     Okay.   So we are panning around.   We are  
8     going to try and pause it when we can see a red truck  
9     on the Mexican side.

10          **Q.     (BY MR. DUBOIS)   Pause.**

11          A.     Right there.   Okay.   So what we couldn't see  
12     in the Reclamation photographs that we can see here is  
13     actually the inlet to the gates for the Acequia Madre,  
14     and that is that darker rectangle below that red truck  
15     that's in Mexico on the left-hand side of the  
16     photograph.   Can you play the clip?

17                     (The video was played.)

18          A.     So that's the American Canal.   We can see the  
19     storm water crossing and then it's facing downstream  
20     towards the city of El Paso.

21          **Q.     (BY MR. DUBOIS)   What's the function of the**  
22     **International Dam?**

23          A.     To deliver the water to Mexico.

24          **Q.     Who operates the dam?**

25          A.     IBWC.

1           Q.    And what water is passed through the  
2 International Dam to the bed of the Rio Grande?

3           A.    Only floodwaters or operational spills.

4           Q.    Okay.  Are both the American Dam and the  
5 International Dam in -- in Texas?

6           A.    No.  They are partially in Texas and  
7 partially in Mexico.

8           Q.    Okay.  Are there any other structures on the  
9 Rio Grande below International Dam that the project  
10 releases water to?

11          A.    Not anymore.

12          Q.    Are you familiar with the Hudspeth County  
13 Conservation and Reclamation District?

14          A.    I am.

15          Q.    Do they have a contract with Reclamation to  
16 pay for the use of project wastewater?

17          A.    Yes, they do.

18          Q.    Okay.  Next slide, please.  The next slide  
19 has been marked -- previously marked Estrada-Lopez  
20 Demo 17.  Do you have that in front of you?

21          A.    Yes.

22          Q.    Okay.  Can you indicate on Demonstrative  
23 Slide 17 where Hudspeth County Conservation and  
24 Reclamation District picks up water and where the  
25 lands located -- where the lands irrigated by Hudspeth

1     **County are located?**

2           A.     Yes.    So if we can zoom in to the Hudspeth  
3     County area, the golden orange arrows pointing towards  
4     Hudspeth County, that pea green cross hatching  
5     indicates the irrigated lands for Hudspeth County  
6     Conservation and Reclamation District.   We can see at  
7     the El Paso County and Hudspeth County lines, there's  
8     a pinch point.   This is where the Rio Grande project  
9     facilities are ending, and water is then taken across  
10    the state -- county line into Hudspeth County and  
11    allowed to be used by them under our contract.

12          **Q.     All right.   Moving on from the diversion**  
13    **storage structures.   Are there other structures that**  
14    **are project facilities used to convey or move water**  
15    **through the irrigation or project system?**

16          A.     Yes.

17          **Q.     And what kind of structures are those?**

18          A.     There are canals, laterals, wasteways, and  
19    drains.

20          **Q.     All right.   Next slide, please.   I'm showing**  
21    **you what has been marked Estrada-Lopez Demonstrative**  
22    **18.   Do you have that in front of you?**

23          A.     Yes.

24          **Q.     What's the source of these two photos?**

25          A.     These are Reclamation photos that were taken

1 during the tour with the Special Master.

2 Q. Did you take these photos?

3 A. Yes, I did.

4 Q. Okay. Can you tell the -- the Special Master  
5 what is shown on the left-hand photo?

6 A. Yes. On the left-hand side is a canal that  
7 we saw on the tour in El Paso Valley.

8 Q. What is on the right-hand photograph?

9 A. On the right-hand photograph, this is a  
10 lateral that we saw in the Mesilla Valley.

11 Q. How does the elevation of the canals and the  
12 laterals compare to the -- to the grade or elevation  
13 of the surrounding farmland?

14 A. As we saw on the tour, and we can kind of  
15 tell from these photographs, the canals and laterals  
16 are at a similar elevation or just above grade.  
17 Because this is a gravity-delivered system, they need  
18 to be slightly elevated in order to get the water to  
19 the farms.

20 Q. How many miles of canals and lateral ditches  
21 are there in the project?

22 A. There is about 140 miles of canals and 450  
23 miles of laterals.

24 Q. Does that include the farm ditches and the --  
25 and the farm laterals?

1           A.     No, it does not.

2           **Q.     Okay.  What are wasteways?**

3           A.     Wasteways, we saw earlier, are typically  
4     connected to a canal, and they're used to help with  
5     the operation and maintenance of the delivery system.  
6     Mostly it's used to get sediment using the water back  
7     to the Rio Grande.  Also, they can use it if they need  
8     to divert more water at the canal headings to get the  
9     water moving because it's a gravity feed system, then  
10    they can send that water back to the Rio Grande for  
11    delivery elsewhere because it's -- after it gets the  
12    water moving, it's not needed for irrigation in that  
13    section.

14          **Q.     Within the project, are the flows from the**  
15    **wasteways measured?**

16          A.     Some of them are.

17          **Q.     Who measures the flows in the wasteways?**

18          A.     The irrigation districts do.

19          **Q.     And are the flows from the -- how are the**  
20    **flows from wasteways represented in project**  
21    **accounting?**

22          A.     There are bypass orders, when we get the  
23    orders, and then in the allocation accounting, for  
24    some of the waste, there is a reduction in the charges  
25    to the irrigation district, if it was an ordered

1 bypass, and then we charge them whichever is -- or we  
2 reduce their charge by whichever is less, the  
3 requested bypass or the measured wasteway delivery.

4 Q. Okay. And why the difference? Why is it the  
5 lesser of those two?

6 A. To encourage efficiency.

7 Q. All right. Next slide, please. Michelle,  
8 you referred to orders, and I'm showing you what's  
9 been marked as Estrada-Lopez Demonstrative Slide 19.  
10 Can you -- how do the order sheets received from the  
11 districts reflect the use of wasteways?

12 A. So we can see on the left-hand side of this  
13 order sheet, there's a number of rows labeled "bypass"  
14 or "bypass WW" and then the number. That is to  
15 indicate water that will be moved through the  
16 wasteways.

17 Q. What does WW32 mean?

18 A. It means Wasteway 32, and this would be in  
19 the Mesilla section.

20 Q. Okay. What are drains, and how do they  
21 differ from canals?

22 A. Drains are not part of the delivery system.  
23 They are, as the name indicates, for drainage, and  
24 they are much deeper in elevation than the canals and  
25 laterals, because they are using gravity to move the



1 water through the root zone of the irrigated acreage  
2 into the drains for reuse. They create the return  
3 flows to the Rio Grande or they're delivered to canals  
4 for use downstream in the project.

5 Q. Next slide, please. Michelle, the slide on  
6 the screen is now -- is one that's previously marked  
7 as Estrada-Lopez Demonstrative 20. Can you explain to  
8 the Special Master what he's seeing in the picture on  
9 the left?

10 A. Yes. This is the photograph of the Del Rio  
11 drain that I took on the tour with the Special Master.

12 Q. Okay. Now, you were talking about the -- the  
13 -- the depth of the drains relative to the surrounding  
14 land. Can you explain that using this photograph and  
15 -- and what the drains are designed to do?

16 A. Yes. We can see the orchards off to either  
17 side of the drain, and the drain is much deeper than  
18 the surrounding lands. My understanding is most of  
19 them are around 10 feet below the grade. They'd be  
20 more in some spots. So in the right-hand bracket, we  
21 can see just a small portion of the Mesilla Valley  
22 part of the project. The green lines are indicating  
23 the location of drains. The blue lines are indicating  
24 the location of canals. So you can see we have  
25 constructed many drains throughout the system. This

1 is to help move the water, once the farmers are  
2 irrigating. The water is going into the root zone for  
3 the crop. Not all of it is used by the crop, so the  
4 drains are constructed to help move that water more  
5 quickly back to the Rio Grande. So we're collecting  
6 it at all of these various locations, and it is  
7 traveling by gravity downstream. We can see in this  
8 bracket, some of the drains are hitting the Rio  
9 Grande, and some of them are hitting the headings of  
10 other canals and laterals.

11 **Q. Generally speaking, where's the water that**  
12 **flows into the drains go?**

13 A. To the Rio Grande for reuse in the project.

14 **Q. Okay. Do these drains tend to cover**  
15 **substantial areas?**

16 A. Yes. It covers large areas of the project.

17 **Q. Okay. I'm going to show you one more video**  
18 **clip, No. 9, and can you explain to the Special Master**  
19 **what is shown in -- in this next video clip? Again,**  
20 **this clip is from the Texas drone flyover shot in**  
21 **August of this year.**

22 (The video was played.)

23 A. Okay. So as we pause at the beginning part  
24 of this clip, we're looking at the Rio Grande. We're  
25 facing north upstream, and we can actually see two

1 drains for sure on this video clip. The first one I  
2 wanted to point out is on the left-hand side. We can  
3 see the drain is actually leaving the Rio Grande, so  
4 this would be the terminus of the drain. What we are  
5 going to follow is the Del Rio drain, and it's going  
6 to be off to the east side of the river, and then  
7 we're going to turn and follow it for part of the  
8 ways. Play the clip, please.

9 (The video was played.)

10 A. So on the left-hand side, they've highlighted  
11 the structure that we're following. So we have the  
12 Del Rio drain here, and then we're going to turn and  
13 follow the Del Rio drain. You can see how it cuts  
14 through lots of the acreage in this section of the  
15 project. It's going to turn right here. And we can  
16 see it's going through these acres of pecan trees, and  
17 eventually, it will go further down, and that water  
18 will be reused in the project for irrigation.

19 **Q. (BY MR. DUBOIS) Okay. Do you know why the**  
20 **drains are included into the project?**

21 A. Yes. They were not part of the original  
22 construction, and there was issues within the  
23 farmlands with water logging for the crops and so  
24 Reclamation went in and constructed hundreds of miles  
25 of drains throughout the project to help the water

1 move through the root zone more quickly.

2 **Q. What's the importance of the drains to the**  
3 **project?**

4 A. They are what we -- we create the return  
5 flows that come back at a more quick rate after they  
6 were constructed, and they also help the crops and the  
7 farmers with their irrigation because it moves the  
8 water through the root zone more quickly.

9 **Q. About how many miles of drains are there in**  
10 **the project?**

11 A. There's hundreds of miles.

12 **Q. Okay. Are the flows -- are all the**  
13 **structures you mentioned, the canals, the laterals,**  
14 **the drains, are all those considered to be project**  
15 **facilities?**

16 A. Yes, they are.

17 **Q. Are all of these facilities currently owned**  
18 **and controlled by the United States?**

19 A. No, they are not.

20 **Q. What structures are owned and controlled by**  
21 **the United States at this point?**

22 A. United States owns the five diversion dams  
23 and the two storage dams. We operate the two storage  
24 dams and the -- the two diversion dams in Texas and  
25 New Mexico.

1           Q.    I've got a few questions about general  
2 project operations I'd like to shift to. Does  
3 Reclamation require contracts in order to receive  
4 water from the Rio Grande project?

5           A.    Yes, we do.

6           Q.    And are there more than one type of contract  
7 that relate to water service -- service or rental from  
8 the Rio Grande project?

9           A.    Yes, there are.

10          Q.    Okay. Next slide, please. Using the next  
11 slide, which has been marked Estrada-Lopez  
12 Demonstrative 21, can you describe for the Special  
13 Master the types of contracts that you deal with that  
14 deal with water -- project water delivery?

15          A.    Yes. The five types of contracts that we  
16 deal with are the repayment contracts, the transfer  
17 contracts, the operating agreement, the 1920 Act, the  
18 miscellaneous purposes contract, and a Warren Act  
19 contract.

20          Q.    Okay. Let's start walking through these  
21 contracts and describe for the Special Master the  
22 various categories of contracts. I'm showing you what  
23 has been marked as U.S. Exhibit 367. Have you seen  
24 this contract before?

25          A.    Yes.

1           Q.    Have you had occasion to use it as part of  
2 your job or to refer to it as part of your job, I  
3 should say?

4           A.    Yes, I have.

5           Q.    All right. Can you tell the Court what this  
6 document is?

7           A.    This is what we refer to as the repayment  
8 contract for EBID.

9           Q.    And what is the repayment contract?

10          A.    This contract set forth the terms for the  
11 farmers in New Mexico or in Elephant Butte Irrigation  
12 District to repay the federal government for the  
13 construction of the project facilities.

14          Q.    Is this 1937 repayment contract still  
15 considered to be in effect?

16          A.    Yes, it is.

17          Q.    All right. I'm showing you what's been  
18 identified next as Exhibit US-458. Can you identify  
19 this document?

20          A.    Yes. We've referred to this as the repayment  
21 contract for EP1.

22          Q.    Okay. And, again, what does -- what is -- is  
23 this a document that you have referred to and used in  
24 -- as part of your job?

25          A.    Yes, I have.

1           Q.    And, again, is this contract also considered  
2 still to be in full effect -- or in effect, I should  
3 say?

4           A.    Yes, it is.

5           Q.    Okay. I'm going to show you next what's been  
6 identified as -- so backing up a second. So the  
7 US-367 and US-458, are those what you referred to as  
8 the repayment contracts?

9           A.    Yes, they are.

10          Q.    All right. Showing you what's been  
11 identified as U.S. Exhibit 511. Okay. Pardon me for  
12 -- for -- needed to check tech there for a second.  
13 Can you identify what's been -- what is in front of  
14 you as US-511?

15          A.    Yes. This is what we call the transfer  
16 contract for EBID.

17          Q.    And is this a full and complete copy of the  
18 entire transfer contract for EBID?

19          A.    No. It's missing the attachments, which have  
20 all of the land survey and physical descriptions of  
21 the transferred properties.

22          Q.    So what is missing is the individual land  
23 description for the, I think you've described it as  
24 hundreds of miles of drains and 400 miles or so of  
25 laterals and all of -- or at least that portion of it

1 in EBID; is that correct?

2 A. Correct.

3 Q. Have you ever had, as part of your job,  
4 occasion to refer to the -- to those legal  
5 descriptions?

6 A. No, I have not.

7 Q. Do you use the portion of the -- have you had  
8 occasion to refer to and rely on the -- the portion of  
9 the contract that is included in US-511?

10 A. Yes, I have.

11 Q. Okay. I'm sorry. So this was the 1979 EBID  
12 transfer contract; is that correct?

13 A. Yes.

14 Q. And how -- and I'll point you to US-511  
15 underscore 009, what's been Bates labeled as 511  
16 underscore 0009. Does -- does this contract relate to  
17 and define the United States' obligation with respect  
18 to making allocations of water to EBID?

19 A. Yes, it does, under the water control  
20 section.

21 Q. All right. And what does that provide?

22 A. This says that the United States will make  
23 allocation of available stored project water among  
24 EBID, EP1, and Mexico. And then it also states that  
25 we will ensure the delivery of the allocated water to



1 the canal headings at other diversion points and then  
2 make accounting of that water.

3 Q. All right. Thank you. I'm showing you  
4 what's been identified now as Exhibit 512 -- U.S.  
5 Exhibit 512. I'm sorry. Can you identify this  
6 document?

7 A. Yes. This is the -- what we call the  
8 transfer contract for EP1.

9 Q. And what does the transfer contract for EP1  
10 do?

11 A. It transfers the canals, laterals, wasteways,  
12 and drains in Texas part of the project to EP1 for  
13 them to operate and maintain.

14 Q. And is this a full and complete copy of the  
15 entire contract?

16 A. No. It's also missing the attachment that  
17 describes all of the land survey information.

18 Q. And have you had occasion to review the land  
19 survey information as part of your job?

20 A. No, I have not.

21 Q. Have you referred to the portion of the  
22 contract that is included as US-512 in relation to  
23 your job functions?

24 A. Yes, I have.

25 Q. Okay. And how does -- how does the transfer

1 -- the -- the 1980 EP1 transfer agreement relate to  
2 water deliveries?

3 A. It also has stipulations for water control  
4 obligating the United States.

5 Q. All right. I'll point you to US-512  
6 underscore 0011, and can you point to the paragraphs  
7 that you're referring to?

8 A. Yes. 6A and 6B.

9 Q. All right. And does the -- the asterisk in  
10 handwriting, do you know the source for that?

11 A. No, I do not.

12 Q. Have you ever relied on that for any  
13 information or -- or for any other purpose?

14 A. No, I have not.

15 Q. Okay. All right. Thank you. Now, I'm  
16 showing you what's been identified as Exhibit NM-2373.  
17 Can you identify this document, please?

18 A. Yes. This is the operating agreement for the  
19 Rio Grande project from 2008.

20 Q. Okay. So this is what's referred to as the  
21 2008 operating agreement in sort of the common  
22 parlance?

23 A. Yes.

24 Q. All right. And what is the 2008 operating  
25 agreement?

1           A.    It is an agreement between Reclamation, EBID,  
2           and EP1, and it's going to be the basis of how we do  
3           the allocation and accounting for the Rio Grande  
4           Project for the U.S. districts.

5           **Q.    Was an operating agreement required by the**  
6           **transfer contracts that are previously discussed as**  
7           **US-511 and 512?**

8           A.    Yes.  That was part of the terms.

9           **Q.    Okay.  How does the 2008 operating agreement**  
10          **relate to water deliveries?**

11          A.    This is the basis for the allocations for the  
12          U.S. districts, and they can only order water based on  
13          those allocations, and Reclamation makes delivery of  
14          those orders.

15          **Q.    Okay.  Is EBID the only entity in New Mexico**  
16          **with the contract entitling it to demand and receive**  
17          **water from the Rio Grande Project?**

18          A.    Yes, it is.

19          **Q.    Does the State of New Mexico have a contract**  
20          **with the United States for under which it can demand**  
21          **water from the Rio Grande Project?**

22          A.    No, it does not.

23          **Q.    Does the State of New Mexico have a contract**  
24          **with the United States that allows it to use Rio**  
25          **Grande Project water?**

1           A.     No, it does not.

2           **Q.     Has the State of New Mexico ever had a**  
3 **contract with United States under which it could**  
4 **demand release or use of project water?**

5           A.     No, it has not.

6           **Q.     Okay. I'd like to switch to the other kinds**  
7 **of contracts that you referred to.**

8                   **JUDGE MELLOY:** Mr. Dubois, maybe this  
9 might be a good point to take a break. We've been  
10 going for a little while now. Why don't we take about  
11 a 20-minute break and come back at -- at 3:15 our  
12 time. All right?

13                   **MR. DUBOIS:** Yes, Your Honor. We will  
14 be back at 3:15.

15                   **JUDGE MELLOY:** All right. Thank you,  
16 everyone.

17                                   (Recess.)

18                   **JUDGE MELLOY:** All right. Are we all  
19 back? Can you hear me, Mr. Dubois?

20                   **MR. DUBOIS:** Yes. Ms. Estrada-Lopez and  
21 I are back, so if --

22                   **JUDGE MELLOY:** Before you proceed, let  
23 me just mention one thing. I don't know if this is an  
24 oversight, but you had Ms. Estrada-Lopez testify about  
25 the operating agreement New Mexico 2373, but that has

1 not been -- was it your intent to move that into  
2 admission, because that's not one that has been  
3 admitted. It's a B objection, and I understand the  
4 basis of the objection was completeness.

5 **MR. DUBOIS:** No. I believe that -- was  
6 that a B objection? I thought the completeness was on  
7 511 and 512. You're right.

8 **MR. WECHSLER:** The list I'm looking at  
9 does indicate New Mexico 2373, which is the operating  
10 agreement, is an A category with no objection, and we  
11 do not object to that. The rule of completeness was  
12 on US-511 and 512, and our understanding is the United  
13 States has looked. We asked them to go and look for a  
14 complete copy. When none could be found, we  
15 determined that the -- the exhibit that Ms.  
16 Estrada-Lopez identified as missing simply wasn't  
17 important enough to keep it out, so we withdraw any  
18 objections to those two exhibits.

19 **JUDGE MELLOY:** So 511 and 512 have not  
20 been previously admitted, but they can?

21 **MR. WECHSLER:** They can be, Your Honor.  
22 We heard this morning that you had included them on  
23 the list that had been identified as admitted, and I  
24 didn't stop the flow of testimony because we had  
25 already made that determination ahead of time that we

1 were not going to object to it, and we didn't think it  
2 was worth raising.

3 **JUDGE MELLOY:** All right. Okay. Then I  
4 think we're all set then.

5 **MR. DUBOIS:** Yeah. It may be -- it may  
6 be just that -- excuse me -- somehow the -- the rule  
7 of completeness thing got -- got moved. I -- I don't  
8 know exactly how that happened. My apologies if it  
9 was on our end.

10 **JUDGE MELLOY:** All right. We know 2373  
11 is in evidence, just so there's no misunderstanding.

12 **MR. DUBOIS:** Correct.

13 **JUDGE MELLOY:** Okay. All right. You  
14 may proceed, Mr. Dubois.

15 **MR. DUBOIS:** Thank you, Your Honor.

16 **Q. (BY MR. DUBOIS)** All right. Ms.  
17 Estrada-Lopez, we were shifting onto talking about the  
18 1921 -- 1920 Miscellaneous Purposes Act contracts. Do  
19 you recall that?

20 **A.** Yes, I do.

21 **Q.** Okay. Can you tell the Special Master what  
22 1920 Miscellaneous Purposes Act contracts are?

23 **A.** Yes. We enter into contracts under the 1920  
24 Act to convert water from the original project use of  
25 irrigation to something other than irrigation, and in

1 this instance, it would be for municipal and  
2 industrial use.

3 Q. All right. So it is -- it is converting a  
4 portion of the project water from irrigation to  
5 essentially M&I in this particular case; is that  
6 correct?

7 A. Yes.

8 Q. Okay. Are 1920 Miscellaneous Purpose Act  
9 contracts currently just contracts with the municipal  
10 entity wanting to use the water?

11 A. No. They have to be with the original  
12 project entity.

13 Q. Okay. Can you explain to me how  
14 Miscellaneous Purposes Act contracts work, how does an  
15 entity obtain -- how does an entity like El Paso, the  
16 City of El Paso, obtain access to the water to be  
17 converted to M&I?

18 A. In this case, EP1 got a contract with  
19 Reclamation to convert part of their water from  
20 irrigation to M&I, then it can be entered into a  
21 contract with a third party in order to use that  
22 water.

23 Q. All right. What entity has 1920  
24 Miscellaneous Purposes Act contracts under the Rio  
25 Grande project?

1           A.     EP1 and the City of El Paso.

2           Q.     All right. I'm showing you what's been  
3 identified as Texas Exhibit 0084. Can you identify  
4 this document?

5           A.     Yes. This is a conversion contract for the  
6 1928 contract for part of the water for EP No. 1 to  
7 convert it from irrigation to miscellaneous purposes.

8           Q.     All right. Does the actual contract start on  
9 the next page? Actually, two pages, I believe. Oops.

10          A.     This one starts at the beginning.

11          Q.     Okay. I'm sorry. It does. All right. Have  
12 you had occasion as part of your responsibilities to  
13 work with this contract?

14          A.     Yes, I have.

15          Q.     Okay. And what's the function of this  
16 contract?

17          A.     It converts a part of EP No. 1's allocated  
18 water to be used for purposes other than irrigation.

19          Q.     All right. And is there a subsequent  
20 contract that is necessary to -- to implement the use  
21 of that converted water by municipality?

22          A.     Yes. We call them the third-party contracts  
23 that allows for the implementation of the converted  
24 waters use.

25          Q.     All right. I'm going to show you what's been



1 marked as US-116. Can you identify that document,  
2 please?

3 A. Yes. This is the 2001 implementing contract.  
4 It actually starts a few pages in.

5 Q. The next page. Is that the contract itself?

6 A. Yes.

7 Q. And have you had occasion as part of your job  
8 responsibility to utilize and refer to this contract?

9 A. Yes, I have.

10 Q. And what is this contract -- what is the  
11 function of this contract?

12 A. This is the contract between Reclamation,  
13 EP1, and the City of El Paso that allows for the use  
14 of the converted water under EP1's allocation to be  
15 delivered to the water treatment plant in El Paso and  
16 the use of sewage effluent by the EP1.

17 Q. Is this the only 1920 Miscellaneous Purposes  
18 Act contract that allows El Paso Water Utilities to  
19 use converted project water?

20 A. No, it's not.

21 Q. How long -- how long have there been 1920  
22 Miscellaneous Purposes Act contracts allowing the City  
23 of El Paso to use a portion of the project irrigation  
24 water?

25 A. Since 1941.

1           Q.    Is the water provided to El Paso Water  
2 Utilities part of the EP1 allotment?

3           A.    Yes.  It comes from the EP1 allocation.

4           Q.    Why is it treated as part of the EP1  
5 allotment or allocation?

6           A.    Because it is the converted portion of EP1's  
7 allocation to M&I uses.

8           Q.    What is the -- is it based on conversion of  
9 water from particular acreage?

10          A.    Yes, I believe so.

11          Q.    Is El Paso Water Utility the only entity in  
12 either state to have 1920 Miscellaneous Purposes Act  
13 contract for the conversion and use of irrigation  
14 water for non-irrigation purposes?

15          A.    Yes.  The City of El Paso can use it for  
16 that.

17          Q.    Is there a 1920 Miscellaneous Purposes Act  
18 contract that allows the City of Las Cruces to use  
19 project irrigation water for M&I purposes?

20          A.    No, there is not.

21          Q.    Can Las Cruces use project irrigation water  
22 for M&I -- for -- I'm using an acronym, M&I.  What  
23 does M&I mean?

24          A.    Municipal and industrial.

25          Q.    Thank you.  Can Las Cruces use project

1     irrigation water for municipal and industrial purposes  
2     without a 1920 Miscellaneous Purposes Act contract?

3         A.     No, they cannot.

4         Q.     Okay. You also referred to contracts or a  
5     contract held by the Hudspeth County Water  
6     Conservation and Reclamation District. Do you recall  
7     that?

8         A.     Yes, I do.

9         Q.     Is that what is referred to as a Warren Act  
10    contract?

11        A.     Yes, it is.

12        Q.     And what is a Warren Act contract?

13        A.     A Warren Act contract is a contract that  
14    Reclamation enters into for the use of project  
15    facilities by non-project entities or for the use of,  
16    in this case, renting project water once the project  
17    is done with it.

18        Q.     And does Hudspeth County Conservation and  
19    Reclamation District have a Warren Act contract with  
20    the United States?

21        A.     Yes, we do.

22        Q.     I'm showing you what's been marked as US-436.  
23    Can you identify this document, please?

24        A.     Yes. This is what we refer to as the Warren  
25    Act contract with Hudspeth County Conservation and

1 Reclamation District from 1951.

2 Q. Is this the current contract -- Warren Act  
3 contract in effect with Hudspeth County?

4 A. Yes, it is.

5 Q. And does Warren Act contract entitle Hudspeth  
6 to demand a release from storage or guarantee a  
7 delivery of any set amount of water?

8 A. No, it does not.

9 Q. Does this contract identify the source of  
10 water rented to Hudspeth County?

11 A. Yes, it does.

12 Q. Where is that located?

13 A. In the whereas marked 7.

14 Q. And what does it provide as far as what water  
15 the -- the Hudspeth County is renting?

16 A. Project return flow, drainage, and  
17 operational waste that is available to them at the  
18 terminus of the Tornillo main canal, the Fabens Waste  
19 Channel, and from the Tornillo Drain outlet.

20 Q. Do you know about how long Hudspeth County  
21 Water -- Hudspeth County Conservation and Reclamation  
22 District has had Warren Act contracts for the use of  
23 project LR?

24 A. Yes. Since 1924.

25 Q. Does the project deliver water to any entity

1 other than those under the contracts you've just  
2 described?

3 A. Yes, we do.

4 Q. And to what entity is that?

5 A. To the country of Mexico.

6 Q. Okay. I'm showing you the next slide,  
7 please.

8 JUDGE MELLOY: Could I ask just a real  
9 quick question?

10 MR. DUBOIS: Absolutely.

11 JUDGE MELLOY: Why do they call it  
12 rental of water to Hudspeth County as opposed to sale  
13 of water to Hudspeth County?

14 THE WITNESS: I don't know the answer to  
15 that.

16 JUDGE MELLOY: Just what they do. All  
17 right. Thank you.

18 MR. DUBOIS: And it may be, Your Honor,  
19 that it's simply a way of describing that it's not an  
20 ownership interest in any amount of water, but just  
21 the -- the use of water. But it's -- it's an old set  
22 of contract language.

23 Q. (BY MR. DUBOIS) All right. Ms.  
24 Estrada-Lopez, we were just talking about the delivery  
25 of Mexico. How much water is delivered to Mexico?

1           A.     We can deliver up to 60,000 acre-feet.

2           Q.     And is 60,00 acre-feet delivered in each  
3     year?

4           A.     No, it is not.

5           Q.     In what circumstances can that be reduced?

6           A.     Under the treaty between the U.S. and Mexico,  
7     we can reduce the amount of water that we deliver to  
8     Mexico if there is an extraordinary drought or serious  
9     accident to the irrigation system in the United  
10    States.

11          Q.     Is Reclamation the entity that has  
12    historically determined the allocation to Mexico?

13          A.     Yes, we are.

14          Q.     Is Reclamation the entity that makes the  
15    releases from storage to meet any obligation to  
16    deliver water to the Acequia Madre?

17          A.     Yes, we do.

18          Q.     Okay. I'd like to switch gears a little bit  
19    and talk about operation and maintenance role of  
20    Reclamation. You listed a number of structures  
21    previously, the dams, the canal headings, the laterals  
22    and drains and wasteways. What was the United States'  
23    responsibility for operating and maintaining project  
24    facilities prior to 1979?

25          A.     Reclamation operated and maintained the

1 entirety of the project facilities from the storage  
2 dams and delivered the water all the way to the farms.

3 **Q. What changed Reclamation's role of**  
4 **responsibility for operation and maintenance?**

5 A. The irrigation districts met the terms of  
6 their repayment contracts, so the operation and  
7 maintenance of the distribution facilities and drains  
8 was transferred to the irrigation districts. So that  
9 would change our responsibility from delivering water  
10 to the farms to delivering water to the irrigation  
11 districts.

12 **Q. These are the contracts that we talked about**  
13 **before, US-511 and 512?**

14 A. Yes, they are.

15 **Q. In what way did the U.S. responsibilities for**  
16 **operation and maintenance of the facilities change**  
17 **with transfer?**

18 A. Reclamation was no longer operating and  
19 maintaining the canals, wasteways, drains, and the  
20 irrigation districts were taking over that and then  
21 the irrigation districts also took over taking the  
22 order from the farmers and delivering the water from  
23 the diversion points to the farmers. So Reclamation  
24 was only delivering water to the diversion points.

25 **Q. Does Reclamation have any responsibility for**

1 maintaining any part of the channel of the Rio Grande  
2 below -- Rio Grande below Elephant Butte Reservoir?

3 A. Yes, we do.

4 Q. And what responsibility is that?

5 A. Reclamation maintains the channel between  
6 Elephant Butte Dam and Caballo Reservoir and from  
7 Caballo Dam down to Percha Diversion Dam.

8 Q. Did the transfer to the districts of the  
9 operation and maintenance responsibility also affect  
10 Reclamation's role in the water delivery management?

11 A. Yes, it did.

12 Q. In what way?

13 A. Reclamation was previously allotting water to  
14 the farmers and taking their orders and delivering it  
15 to them, and now, we are allocating water to the  
16 irrigation districts and taking orders from the  
17 irrigation districts for delivery at the diversion  
18 points.

19 Q. Does the United States have any  
20 responsibility for management and delivery of water  
21 below the diversion dams to the two districts?

22 A. No.

23 Q. I'd like to talk about Reclamation's role in  
24 the project water operations during the course of the  
25 year. Next slide, please. Can you -- using what's



1    been marked as Estrada-Lopez Demo No. 23, can you walk  
2    the Special Master through a summary of the  
3    Reclamation's role through a water year?

4       A.    Yes.  We have three distinct roles during a  
5    water year, before the releases, during the releases,  
6    and after the releases.  Before the releases,  
7    Reclamation is making an initial allocation to Mexico  
8    and the irrigation districts in the U.S., and we are  
9    updating that allocation as water is being delivered  
10   to the Rio Grande Project.  During the irrigation  
11   season, we are the ones making the releases from the  
12   project storage to the districts in Mexico, and we are  
13   doing this by confirming and executing the orders from  
14   the irrigation districts in Mexico, and we track the  
15   diversion at those delivery points for us.  We are  
16   continuing to make allocation updates as long as water  
17   is coming into the Rio Grande project, and the  
18   irrigation season has not ceased, and we are getting  
19   preliminary accounting data from the irrigation  
20   districts and IBWC and reviewing that, then after the  
21   releases have completed for the year, we are working  
22   on collecting all of the final hydrologic data and  
23   developing the accounting charges and credits against  
24   the allocations and determining the allocation balance  
25   that will be available for the following season.

1 During the aftertime, we are also developing our  
2 reports to the Rio Grande Compact Commission on the  
3 operations of the Rio Grande Project.

4 Q. Okay. Going back to the beginning of the  
5 season, what do you mean by initial allocation?

6 A. This is the first allocation that we make to  
7 Mexico and the irrigation districts for the upcoming  
8 season.

9 Q. And what is usable water?

10 A. Usable water is water that's available to the  
11 Rio Grande Project for release and delivery to its  
12 beneficiaries.

13 Q. What is Reclamation's role in determining how  
14 much water is available as usable water in Elephant  
15 Butte Reservoir?

16 A. That is Reclamation's role to determine that.

17 Q. Has the Compact commissioner of New Mexico  
18 ever had a role in making realtime determination of  
19 the usable flow available for allocation to the  
20 irrigation districts in Mexico?

21 MR. WECHSLER: Objection; foundation.

22 Q. (BY MR. DUBOIS) All right. To your knowledge  
23 --

24 JUDGE MELLOY: Do you want to rephrase  
25 or do you want me to rule on that, Mr. Dubois?

1                   MR. DUBOIS: I'll try and rephrase  
2 first, Your Honor.

3           Q.     (BY MR. DUBOIS) In your -- in your -- in your  
4 experience, has the Compact commissioner of New Mexico  
5 ever had a role in making a realtime determination of  
6 the usable flow available for allocation to the  
7 irrigation districts and Mexico?

8           A.     No, they have not.

9           Q.     In your review of allocation records of  
10 Reclamation, have you ever found any evidence that the  
11 Compact commissioner of New Mexico ever had a role in  
12 making determinations of the usable flow available for  
13 allocation to the irrigation districts or Mexico?

14           MR. WECHSLER: I'm going to object to  
15 that, Your Honor. I don't mind the question. I would  
16 like to know what review we're talking about. So it's  
17 a foundational one until I understand what records she  
18 was -- she has reviewed.

19           MR. DUBOIS: All right.

20           JUDGE MELLOY: All right. Why don't you  
21 give us a little more foundation, Mr. Dubois.

22           MR. DUBOIS: All right.

23           Q.     (BY MR. DUBOIS) Michelle, can you tell me  
24 what -- what records that you've reviewed regarding  
25 allocation process -- historical allocation process of

1 Reclamation and determinations of allocations to the  
2 districts?

3 A. I have reviewed the allocation documents from  
4 the 2008 operating agreement period, and I have  
5 reviewed some of the allocation letters from the  
6 pre-2008 operating agreement period.

7 Q. And in any of those records, is there any  
8 indication that the Compact commissioner in New Mexico  
9 ever had a role in making decisions about the usable  
10 flow available for allocation to the irrigation  
11 districts in Mexico?

12 A. No.

13 Q. And is -- is Reclamation's determination of  
14 the amount of water available as usable water in  
15 Elephant Butte Reservoir for -- for allocation to  
16 irrigation districts the same as Compact accounting  
17 for New Mexico's deliveries to Elephant Butte  
18 Reservoir?

19 MR. WECHSLER: Objection; foundation.

20 I haven't heard a foundation, Your  
21 Honor, for any understanding of the Compact-to-Compact  
22 accounting of the Rio Grande Compact Commission.

23 JUDGE MELLOY: Well, I'm going to  
24 overrule that objection. I believe that this witness,  
25 as the manager, would be qualified to testify to that.

1 I do want to clarify one thing, though,  
2 Mr. Dubois. When you were asking about New Mexico's  
3 Compact commissioner having a role, I think I heard  
4 you say Mexican allocation. Did you mean Mexican or  
5 New Mexico?

6 MR. DUBOIS: No. Actually, Your Honor,  
7 I was -- I was referring to allocation to the  
8 districts or Mexico.

9 JUDGE MELLOY: Okay.

10 MR. DUBOIS: So as we will get to, there  
11 is an allocation to the districts and to Mexico.

12 JUDGE MELLOY: So you're talking about  
13 both?

14 MR. DUBOIS: Yes.

15 JUDGE MELLOY: Okay. All right. Why  
16 don't you restate the question, and the witness can  
17 answer.

18 Q. (BY MR. DUBOIS) Is the -- is Reclamation's  
19 determination of the water available as usable water  
20 in Elephant Butte Reservoir the same as Compact  
21 accounting for New Mexico's deliveries to Elephant  
22 Butte Reservoir?

23 A. No, it's not.

24 Q. Okay. How is it different?

25 A. Reclamation is determining the usable water

1 for the project during the release season and prior to  
2 the release season, and the Compact is looking at data  
3 from the prior year by a calendar year basis.

4 Q. And how do you know that?

5 A. Because I have attended Compact commission  
6 engineering advisors meetings and Compact commission  
7 meetings.

8 Q. Does the -- does the Compact commission use  
9 data that is similar to the data that is used by  
10 Reclamation in making its determination of usable flow  
11 that's available for allocation?

12 MR. WECHSLER: Foundation.

13 MR. DUBOIS: Your Honor, she just said  
14 that she's been -- that she has been attending these  
15 Compact accounting matters, and she makes the reports.  
16 She's familiar with the -- with the general data they  
17 use.

18 MR. WECHSLER: She hasn't said the  
19 latter part, and I've attended many school board  
20 meetings, and yet I'm not familiar with their data.

21 JUDGE MELLOY: I'm going to overrule.  
22 The witness can answer.

23 A. Yes. It's similar data. Reclamation  
24 provides our data to the Compact commission.

25 Q. (BY MR. DUBOIS) All right. What's your role

1 in determining the usable water available for  
2 allocation?

3 A. I'm the one that makes that determination.

4 Q. All right. Next slide, please. Michelle,  
5 we've got up on the screen what's been marked as  
6 Estrada-Lopez Demonstrative No. 24. Can you please  
7 explain, using this slide, for the Special Master, the  
8 general process for determining allocations?

9 A. Yes. First, we -- I need to determine the  
10 water that's available for release to the project for  
11 the allocation, and this is the water that's available  
12 for release and what has already been released in the  
13 current year, then we determine river conveyance  
14 efficiencies. This is going to be based on expected  
15 return flows from drains and wasteways above the  
16 additional diversion points for the project, and also  
17 anticipated river gains and losses, and that is how we  
18 can determine an allocation for each irrigation  
19 district in the U.S. and for Mexico that will be  
20 available to them for them to order and deliver.

21 Q. When's the initial allocation made?

22 A. It's typically in December or January, but it  
23 can be later.

24 Q. Do you make that allocation based on  
25 projections of inflow and water coming into Elephant

1 Butte Reservoir during the runoff season?

2 A. No.

3 Q. Was the -- what is the -- what is the  
4 allocation based on?

5 A. It is based on the water that is in storage  
6 at the time the allocation is made.

7 Q. Okay. So you're looking at a point in time  
8 for volume of storage?

9 A. Yes.

10 Q. All right. Next slide, please. So can you  
11 explain to the Special Master how you make the  
12 starting determination of water in storage that's  
13 available for release?

14 A. Yes. On the slide, we put the different  
15 items that go into the calculation of water available  
16 for release. We start with the total water in storage  
17 at Elephant Butte and Caballo.

18 Q. And how is that determined?

19 A. This is measured by measuring the water  
20 surface elevation at both reservoirs and then  
21 determining what volume is being stored at that water  
22 surface elevation.

23 Q. How does the water surface elevation tell you  
24 the volume of water in storage?

25 A. Reclamation conducts geographic surveys of



1 the land below the Reservoir, approximately every ten  
2 years, and we developed a relationship between the  
3 water surface elevation and the volume that is being  
4 stored at that elevation.

5 Q. So it's a -- a -- a measured elevation  
6 multiplied by a measured capacity for that elevation;  
7 is that correct?

8 A. Yes.

9 Q. All right. So you first determine the total  
10 water in storage. Is there -- and I believe you said  
11 earlier that there is more than one account in storage  
12 in the Elephant Butte Reservoir; is that correct?

13 A. Yes. There are different accounts.

14 Q. All right. What other accounts are there in  
15 storage in Elephant Butte Reservoir?

16 A. Aside from the usable water for the Rio  
17 Grande project, there is San Juan-Chama water and  
18 Compact credit water for the states of New Mexico and  
19 Colorado.

20 Q. What is San Juan-Chama water? Can you  
21 explain that for the Special Master, please?

22 A. Yes. San Juan-Chama water is water from  
23 Reclamation's project that is run by my office, and  
24 this water is diverted from the San Juan River, which  
25 is in the Colorado River basin, and it is diverted

1 into tunnels and transported to Heron Reservoir, which  
2 is in the Rio Grande Compact basin, and it is  
3 delivered via the Chama River, so that is why it's  
4 called the San Juan-Chama Project.

5 **Q. Okay.**

6 A. This water is then used by our project  
7 beneficiaries for the San Juan-Chama project.

8 **Q. How do you determine the amount of San**  
9 **Juan-Chama water that's in storage in Elephant Butte**  
10 **Reservoir?**

11 A. Reclamation in my office, we are tasked with  
12 tracking all of the San Juan-Chama water in the Rio  
13 Grande Compact basin. We do this with an accounting  
14 model, and it is a RiverWare model called the upper  
15 Rio Grande water operations accounting model or we  
16 call it the URGWOM accounting model. This has  
17 representation of all of the storage reservoirs and  
18 rivers for the delivery of this water. We track the  
19 volume and location in each reservoir of the San  
20 Juan-Chama water and the non San Juan-Chama water, or  
21 native water, and there are set methodologies for the  
22 tracking of the evaporation and losses in transporting  
23 the water between reservoirs for this type of water.  
24 Elephant Butte is in this accounting model, and that  
25 is where I get the information for how much San

1 Juan-Chama water is in Elephant Butte.

2 Q. And the output, is the -- is the URGWOM  
3 accounting model based on measured data within the  
4 system?

5 A. Yes. We take hydrologic data measured at  
6 different gages and the reservoirs and weather  
7 stations and include that in the calculations in the  
8 accounting model.

9 Q. Does the State of New Mexico use that model,  
10 as well?

11 A. Yes, they do.

12 Q. Does that model -- so that model tracks  
13 evaporative losses from San Juan-Chama water on a  
14 daily basis; is that correct?

15 A. Yes, it does.

16 Q. Did the State of New Mexico approve the  
17 methodologies in the model?

18 A. Yes. They are part of the team that  
19 developed and approved this model.

20 Q. Does the -- does that model, as part of this  
21 methodology, also track evaporative losses from any  
22 credit water in storage in Elephant Butte Reservoir?

23 A. Yes, it does.

24 Q. Is that determination done on a daily basis?

25 A. Yes, it is.

1           Q.    All right.  And you've mentioned Compact  
2   credit water in storage.  What is Compact credit water  
3   in storage?

4           A.    Under the Rio Grande Compact, the water  
5   delivered by Colorado and New Mexico that is greater  
6   than that that is required for the year is stored as  
7   wet water in Elephant Butte, and that is what I'm  
8   referring to as the Compact credit water in storage at  
9   Elephant Butte.

10          Q.    And where does your initial assessment of  
11   Compact credit water in storage come from for purposes  
12   of your initial calculation of water available for  
13   release?

14          A.    The Rio Grande Compact provides Reclamation  
15   with the volume of water to be stored in Elephant  
16   Butte for January 1st.

17          Q.    And if you're making a determination before  
18   you get that information from the Compact commission,  
19   where do you obtain the data for the Compact credit  
20   water?

21          A.    It is estimated based on the calculations in  
22   the URGWOM accounting model that is run continuously  
23   throughout the year.

24          Q.    All right.  So explain then how you move --  
25   explain then how you move from total water in storage

1     **to usable water in storage?**

2           A.     I take the total water in storage and  
3     subtract out the San Juan-Chama water in storage and  
4     the Compact credit water in storage, and that is my  
5     determination of usable water in storage for the Rio  
6     Grande Project.

7           **Q.     All right. What other adjustments are made**  
8     **to get from the usable water in storage to the water**  
9     **available for release?**

10          A.     After I've determined the usable water in  
11     storage, I subtract out the minimum pools volume for  
12     the reservoirs and an evaporation reserve.

13          **Q.     And what are the minimum pool volumes?**

14          A.     Reclamation has made a determination of a  
15     volume of water for each reservoir that we will not  
16     release, and that is to protect our facility and our  
17     staff. When we get to very low volumes of water, loss  
18     of sediment and debris can be transported through the  
19     outlet works causing a lot of damage to our facility  
20     and possibly causing it so much damage that we could  
21     have trouble releasing water in a future year. This  
22     also puts our staff at greater risk because they would  
23     have to address the problem.

24          **Q.     All right. What's the evaporation reserve?**

25          A.     The evaporation reserve is a volume of water

1 that I hold back due to the potential evaporation that  
2 is greater in the next few months than the inflow into  
3 the reservoirs. So when I'm making the initial  
4 allocation, it's December or January, and the water is  
5 not going to be used until March or later, and so that  
6 water will be physically evaporating. And since we  
7 don't know exactly how much water will come into the  
8 reservoirs during the runoff season, I make a  
9 determination of how much water to hold back to make  
10 sure that I don't over allocate water that I cannot  
11 deliver.

12 Q. All right. So as the usable water in storage  
13 is adjusted for minimum pools and evaporative reserve,  
14 then that leads you to the water available for release  
15 in this chart; is that correct?

16 A. That's correct.

17 Q. So after you determine the amount of water  
18 available for release, can you explain the next step  
19 in the initial allocation process? Next slide,  
20 please.

21 A. So after I determine the water that is  
22 available for release for the allocation process,  
23 we're looking at the river conveyance efficiencies to  
24 determine the allocations.

25 Q. What do you mean by -- what do you mean

1 by "river conveyance efficiencies"?

2 A. I mean, the volume of water that we can  
3 release from Caballo will be a different volume that  
4 we can then deliver at the diversion points. So we  
5 have some methods to estimate how much of the water  
6 that we release can be delivered to the diversion  
7 points.

8 Q. All right. So how is the efficiency -- is  
9 the efficiency of the system for purposes of  
10 allocations, is the same calculation of river  
11 efficiencies -- river conveyance efficiencies applied  
12 to the allocation to Mexico as is -- as applied to the  
13 allocations to the irrigation districts?

14 A. No. We have two different methods.

15 Q. Can you describe the -- the method that  
16 applies to the allocation to Mexico?

17 A. Yes. We are using the Convention of 1906,  
18 which is the treaty between the U.S. and Mexico, for  
19 the process to determine the allocation for Mexico.

20 Q. Next slide, please. Can you use what is  
21 marked -- has been marked as Demonstrative 27, can you  
22 use this slide to explain to the Special Master the  
23 process for applying river conveyance efficiencies in  
24 determining the allocation to Mexico?

25 A. Yes. As we discussed earlier, under the

1 Convention of 1906, we need to deliver to Mexico  
2 60,000 acre-feet or that can be reduced in the case of  
3 an extraordinary drought. So I have to answer the  
4 question, is it an extraordinary drought? And the way  
5 I -- we determine that lately is by looking at the  
6 water available for release. If it is greater than  
7 600,000 acre-feet, we say no, it's not an  
8 extraordinary drought, and we allocate 60,000  
9 acre-feet to Mexico. If the answer is yes, then we  
10 are going to reduce Mexico's allocation, and the  
11 process that we use is called the D1 equation or the  
12 D1 curve, and we assign a proportion of that to the  
13 allocation for Mexico.

14 **Q. Can you explain -- next slide, please. Can**  
15 **you explain the D1 curve to the Special Master,**  
16 **please?**

17 A. Yes. On this slide, we have put a graphic of  
18 the D1 equation or the D1 curve. From this graphic,  
19 you can see that we are using data for the total  
20 annual release from project storage, which is the  
21 yearly release from Caballo Reservoir, and the total  
22 annual delivery to lands in the United States and the  
23 heading of the Acequia Madre, which is the Mexican  
24 canal.

25 **Q. Why all lands in the United States?**



1           A.     Because of the language in the Convention of  
2     1906, it refers to a proportionate decrease in the  
3     Mexican allocation based on the proportionate decrease  
4     to the lands in the United States.

5           **Q.     All right. So how do you make the**  
6     **calculation for the amount of water owed to Mexico for**  
7     **the IBWC based on the D1 curve?**

8           A.     So the D1 curve has data from 1951 to 1978.  
9     That's indicated by the red diamonds. And then using  
10    a regression analysis, we developed an equation called  
11    the D1 equation, and that is represented by the blue  
12    line. So, now, we have a mathematical formula that  
13    relates the total annual release from Caballo to what  
14    can be delivered to the lands in the U.S. and the  
15    heading of the Mexican canal, the Acequia Madre.

16          **Q.     Who did you notify regarding the initial**  
17    **allocation calculation for Mexico?**

18          A.     I provide that information, first, to IBWC.

19          **Q.     Is a report made to both IBWC and Mexico?**

20          A.     Yes. Reclamation provides official  
21    correspondence to IBWC notifying them of the initial  
22    allocation, and then IBWC invites Reclamation to a  
23    meeting called the 1906 meeting where we meet with  
24    Mexico and provide them the information in a  
25    presentation.

1           Q.    You said that a different equation is the  
2 starting point for allocations between the EBID and EP  
3 No. 1; is that right?

4           A.    That's correct.

5           Q.    All right. Next slide, please. Michelle,  
6 I'm showing you what's been marked as Estrada-Lopez  
7 Demo 29. Can you use this slide to explain to the  
8 Special Master how the river conveyance efficiency  
9 estimates are determined in relation to the  
10 calculation of allotments to EBID and EP1 under the  
11 operating agreement?

12          A.    Yes. So we used the 2008 operating agreement  
13 as the basis for the development of the allocations  
14 for EP1 and EBID. We used a D2 equation and a  
15 proportion of that equation for both irrigation  
16 districts, and then it's adjusted based on some  
17 operating agreement adjustments is what I call them,  
18 and that's added to the prior year's allocation  
19 balance, and that is how we determine the current year  
20 allocation for those districts.

21          Q.    All right. Let's start with D2. Can you use  
22 the next slide, please, which is Demonstrative 29 --  
23 30, excuse me. Can you use this slide to explain what  
24 the D2 equation -- to explain to the Special Master  
25 what the D2 equation is?

1       A.    Yes.  You'll notice that this graph looks  
2   very similar to the D1 equation that we just  
3   discussed.  There is similar data that is part of this  
4   graph.  The data represented in the red diamonds is in  
5   relationship between the total annual release from  
6   project storage, which is the yearly Caballo release,  
7   but on the Y axis, instead of the delivery to the  
8   lands in the U.S. and the heading of the Acequia  
9   Madre, we have the total annual delivery to the  
10  project headings.  So that is the difference in the  
11  data where D1 was delivery to lands, and this one is  
12  delivery to the project headings.  Like D1, we did a  
13  regression analysis and developed this equation per  
14  the relationship between the release and how much we  
15  can deliver to the project headings, and that is  
16  represented by the blue line.  And then --

17       **Q.    And --**

18       A.    -- there's the --

19       **Q.    -- what is a regression analysis?**

20       A.    It is a determination of an equation that  
21  best fits the data.  So in this case, it's a linear  
22  equation that best fits the data.  So it comes up with  
23  algebraic formula that is known as a linear equation  
24  that fits the data from the historic data.

25       **Q.    All right.  Can we return to Demonstrative**

1     **29, please? So under the operating agreement, you**  
2     **start with the D2 equation, and then you said that you**  
3     **make operating agreement adjustments. Can you explain**  
4     **what the operating agreement adjustments are?**

5         A. Yes. There's two that I put together in that  
6     term, one is the drought correction factor. The  
7     drought correction factor reduces the D2 output from  
8     the historic equation based on extraordinary -- or  
9     drought conditions that we're seeing in the project.  
10    The other one is based on an adjustment to EBID's D2  
11    portion of their allocation, and the difference  
12    between the historical D2 portion for EBID and the  
13    adjusted D2 portion for EBID is split proportionately  
14    between the two districts.

15         **Q. All right. Can you explain to the Special**  
16     **Master how the D2 river conveyance efficiency is**  
17     **applied to EP1 in making allocation?**

18         A. Yes. We take the volume of water available  
19     for release and put it into the D2 equation, then we  
20     subtract out the volume that we've allocated to  
21     Mexico, and then approximately 43 percent of that  
22     answer is allocated to EP1.

23         **Q. All right. Now, the -- is the D2 equation**  
24     **directly applied with respect to EBID?**

25         A. Yes. And then we adjust it with the

1 diversion ratio.

2 Q. All right. Explain to me the -- the --  
3 explain to the Special Master the estimated diversion  
4 ratio adjustment to the D2.

5 A. The diversion ratio is a ratio of the total  
6 annual charges for the deliveries for the project,  
7 divided by the total release for the year. So that's  
8 the charges for two irrigation districts in Mexico  
9 divided by the release for the entire year. Since we  
10 don't know that information at the beginning of the  
11 year, we use an estimate for that diversion ratio.  
12 That adjusts the volume that is put into the D2  
13 equation, and then once we get that answer from the D2  
14 equation, then approximately 57 percent of that volume  
15 is allocated to EBID.

16 Q. And who makes the initial calculation of the  
17 operating agreement adjustments that you referred to?

18 A. I make the initial allocation for Mexico and  
19 then a preliminary initial allocation for the  
20 irrigation districts.

21 Q. And do you -- who does the -- who does the --  
22 the preliminary initial allocation to the districts  
23 get conveyed to?

24 A. I send it to the allocation committee.

25 Q. And what's the allocation committee?

1           A.     The allocation committee is the technical  
2     representatives to the three parties of the 2008  
3     operating agreement so that's Reclamation, EBID, and  
4     EP1.

5           **Q.     And who are the members of the -- of the --**  
6     **of the allocation committee at present?**

7           A.     I am the member for Reclamation; Dr. Phil  
8     King, the consulting engineer for EBID is their  
9     representative; and Dr. Al Blair, the district  
10    engineer for EP1, is their representative.

11          **Q.     How often does the allocation committee meet?**

12          A.     We typically meet monthly or more frequently  
13    if needed.

14          **Q.     And what matters are discussed within the**  
15    **allocation committee?**

16          A.     We discuss the allocation, the determination  
17    of the allocations. We discuss the charges that will  
18    be applied to the allocations, and we also discuss  
19    hydrologic conditions that will impact either the  
20    allocation or the irrigation season.

21          **Q.     How are decisions made within the allocation**  
22    **committee?**

23          A.     By consensus.

24          **Q.     And what are your responsibilities on the**  
25    **allocation committee?**

1       A.    I determine the water available for release  
2   from the project, then I'm also responsible for the  
3   initial allocation to Mexico and the development of  
4   the preliminary allocation for the districts. I send  
5   that to the allocation committee. I collect the data  
6   from the irrigation districts for their charges under  
7   the allocation and review that. As the representative  
8   for Reclamation, I'm also responsible for the  
9   documentation of the allocation and accounting for the  
10  operating agreement.

11       **Q.    Does the allocation committee make the final**  
12 **determination of allocation to the districts?**

13       A.    Yes, it does.

14       **Q.    Does the allocation committee make the final**  
15 **determinations on the estimated diversion ratio**  
16 **applied to EBID?**

17       A.    Yes, it does.

18       **Q.    You mentioned you start the initial**  
19 **allocation determination in December or January**  
20 **earlier. Do changes in flow and usable water in**  
21 **storage require updating of the allocations to the**  
22 **districts and Mexico?**

23       A.    Yes, it does.

24       **Q.    How often are those allocation calculations**  
25 **done?**

1       A.    I calculate them monthly.  Sometimes more  
2 frequently.

3       Q.    After you made those calculations, do you  
4 convey those to the other members of the allocation  
5 committee?

6       A.    Yes, I do.

7       Q.    As a general matter, what's the first thing  
8 that needs to be determined in making an amended  
9 allocation?  Next slide.

10      A.    I need to update the water that's available  
11 for release as the conditions have changed at the  
12 storage reservoirs.

13      Q.    What inputs the determination of usable water  
14 available for release vary with time over the year?

15      A.    The total volume of storage and the other  
16 accounts in storage change physically over the year,  
17 as well as how much we've released.

18      Q.    Okay.  Can you go through the boxes  
19 highlighted on what has been marked as Estrada-Lopez  
20 Demonstrative 31 and explain how the amounts of water  
21 in the highlighted boxes have physically changed?

22      A.    The total water in storage at both reservoirs  
23 has changed due to inflows from the deliveries from  
24 New Mexico, due to precipitation and evaporation, and,  
25 also, due to releases.  The San Juan-Chama water has



1 changed because it has evaporated, and there might  
2 have been additional deliveries into Elephant Butte  
3 from the inflow, and there might have been an exchange  
4 of water. The Compact credit water has physically  
5 evaporated, as well as there might have been changes  
6 due to Compact relinquishment or finalized Compact  
7 accounting. The --

8 **Q. How's the -- I'm sorry. Go ahead. Finish.**

9 A. The evaporation reserve changes because I  
10 have less risk, and the water released to date is just  
11 that, how much water we've released to date.

12 **Q. So the evaporation reserve does not really**  
13 **physically change; you make a risk adjustment change;**  
14 **is that correct?**

15 A. That's correct.

16 **Q. Okay. How is inflow to Elephant Butte**  
17 **Reservoir determined? Is there a -- is there a single**  
18 **gage to -- to read or record?**

19 A. No, there's not. We have to calculate it.

20 **Q. Okay. So, generally, how is the**  
21 **determination of available water in storage adjusted**  
22 **to account for inflow?**

23 A. We take the volume of water in storage prior  
24 and the volume of water in storage now, and that is  
25 the -- and the difference is the change in storage,

1 then we've measured the water released, and we've  
2 measured precipitation and evaporation, and from that,  
3 we can determine how much water has come into the  
4 reservoir as inflow.

5 **Q. If you know the total amount in storage, how**  
6 **do you determine the amount available for release?**

7 **Next slide, please.**

8 A. Because there's different accounts in  
9 Elephant Butte, we have to make a determination on  
10 each of those type of accounts, how much it has  
11 changed, in order to determine how much the project  
12 water has changed. So for San Juan-Chama water, we  
13 have to deduct for its proportion of the actual  
14 evaporation at Elephant Butte, and then if there has  
15 been any inflow, I would be able to determine that  
16 from the URGWOM accounting model for San Juan-Chama  
17 water that was delivered from upstream, and there's  
18 also the possibility of an exchange of this water in  
19 Elephant Butte for water upstream, and that would  
20 reduce the volume of San Juan-Chama water and increase  
21 the usable project water.

22 **Q. How are changes to the Compact credit water**  
23 **account determined? Next slide.**

24 A. Similarly, for the Compact credit water, we  
25 need to determine the proportion of the evaporation

1 that occurred on -- from that physical water, and I  
2 get that information from the URGWOM accounting model,  
3 and then other changes to this -- those accounts would  
4 come from a relinquishment under the Rio Grande  
5 Compact, and we would be informed of that from the  
6 Compact states, and then final accounting would also  
7 change the volume of water in Elephant Butte.

8 **Q. Is -- are the results from the URGWOM**  
9 **accounting model shared with the State of New Mexico?**

10 A. Yes, they are.

11 **Q. How often are the URGWOM accounting model**  
12 **results sent to the State of New Mexico?**

13 A. We send them to our FTP site that they  
14 download from every day that we run the model.

15 **Q. And how often do you run the model?**

16 A. We run it on almost every single workday.

17 **Q. Okay. Why does Reclamation determine the**  
18 **amount of evaporation that is occurring from the San**  
19 **Juan-Chama and the Compact credit water in storage?**

20 A. That is the only way that we can determine  
21 the volume of inflow into the reservoir that's  
22 available for the Rio Grande Project.

23 **Q. And why do you need to determine that?**

24 A. Because that water is legally available to  
25 our customers, and I need to use that in the

1 development of the allocation.

2 Q. And once you have your -- next slide. What  
3 is the next step in determining the -- the updated  
4 usable water in storage?

5 A. I take the new total water in storage and  
6 subtract out the updated San Juan-Chama water at  
7 Elephant Butte and the updated Compact credit water at  
8 Elephant Butte and that gives me the updated usable  
9 water for the project allocation process.

10 Q. All right. So once you have the updated  
11 usable water in storage, as shown on Demonstrative 34  
12 -- let's go to Demonstrative 35 -- what else goes to  
13 updating the total water available for release?

14 A. So as we discussed just a few minutes ago, I  
15 changed the evaporation reserve based on the --  
16 there's less risk. So time has passed. We are closer  
17 to the irrigation season or we are in the irrigation  
18 season so we know how much water has come in during  
19 the runoff or the runoff to date, and there's less  
20 chance of evaporation occurring prior to the release  
21 from storage. Then I also have a measurement of the  
22 water released to date, and that is added to the water  
23 available for release that's in storage, and that  
24 gives me an updated water available for release.

25 Q. Why do you add the water released to the

1 water in storage to get an updated water available for  
2 release?

3 A. Because the methodologies for the allocations  
4 needs the total volume for the year for Caballo  
5 release. So that's why we add what we've already  
6 released for the year to what's available for the  
7 continued release to get the annual release.

8 Q. All right. Next slide. Michelle, I've put  
9 up what's been marked as Estrada-Lopez Demo No. 36.  
10 How does the calculation of the updated water  
11 available for release effect allocations to the  
12 districts and Mexico?

13 A. If the water available for release has  
14 increased from the last allocation, it would increase  
15 their allocations.

16 Q. If you artificially underestimate the actual  
17 inflow to Elephant Butte Reservoir, how would it  
18 impact the deliveries to Mexico?

19 A. It would under allocate water to them if we  
20 were following the D1 methodologies, and, therefore,  
21 we would deliver less water than is owed to them.

22 Q. Is there anything you do in updating  
23 allocations that is treated differently than the  
24 initial allocation?

25 A. Yes. In the following an updated

1 allocations, we update the estimated diversion ratio  
2 through the allocation committee.

3 **Q. And how is that update done?**

4 A. Once we are in the release season, the  
5 districts have information on how much water has made  
6 it to their diversion point, and Reclamation has  
7 information on how much we have released from Caballo.  
8 So we're making preliminary calculations of how the  
9 project is performing, and, therefore, we can make an  
10 update to the estimated diversion ratio based on what  
11 we're observing in the river.

12 **JUDGE MELLOY:** Excuse me, Mr. Dubois.  
13 Could you explain diversion ratio one more time,  
14 please?

15 **MR. DUBOIS:** I will let Ms.  
16 Estrada-Lopez do that.

17 **JUDGE MELLOY:** I'm sorry. I meant -- I  
18 meant Ms. Estrada-Lopez. Could you explain diversion  
19 ratio one more time?

20 **THE WITNESS:** Yes. Diversion ratio is a  
21 ratio of the total annual delivery charges. So that  
22 is the charges for the delivery to Mexico plus the  
23 charges for the delivery to EP1 and EBID summed up and  
24 then it's divided by the annual release from Caballo.  
25 So the actual calculation would be for the entire

1 year, but since we're in the middle of the season,  
2 it's an estimate of what it's going to be for the  
3 entire year.

4 Q. (BY MR. DUBOIS) And what's the --

5 JUDGE MELLOY: What's the purpose of the  
6 diversion ratio? What does that tell you?

7 THE WITNESS: It gives us a ratio of how  
8 much water has been delivered compared to how much  
9 water was released, and then it is applied in the  
10 operating agreement methods to shift the D2 equation  
11 for the EBID allocation.

12 JUDGE MELLOY: So -- so it's only  
13 applied to EBID, as I understand it; is that correct?

14 THE WITNESS: Directly, yes. And then  
15 in the operating agreement adjustments, the difference  
16 between the adjusted EBID D2 allocation and the  
17 historic one, that difference, there's the proportion  
18 is split between the two districts.

19 JUDGE MELLOY: Okay. All right. Thank  
20 you.

21 Q. (BY MR. DUBOIS) So, Michelle, are you  
22 familiar with how -- to your knowledge, is the Compact  
23 commission bound by Reclamation's calculation of -- of  
24 inflows to Elephant Butte Reservoir in their Compact  
25 accounting?

1                   MR. WECHSLER: Foundation.

2                   JUDGE MELLOY: Why don't you lay a  
3 little more foundation --

4                   MR. DUBOIS: Okay.

5                   JUDGE MELLOY: -- Mr. Dubois.

6           Q.     (BY MR. DUBOIS) Are you familiar how -- with  
7 how the Compact commission determines the -- New  
8 Mexico's actual Compact deliveries to Elephant Butte  
9 Reservoir?

10          A.     Yes, I have reviewed the Compact accounting  
11 spreadsheets.

12          Q.     And are you familiar with Reclamation's  
13 monthly determinations of -- or periodic  
14 determinations of inflow to Elephant Butte Reservoir?

15          A.     Yes, I am. I'm part of those determinations.

16          Q.     Okay. Does the Compact accounting stick to  
17 or is bound by your determinations of inflow to  
18 Elephant Butte Reservoir?

19          A.     No, it's not.

20          Q.     Does the Compact commission do a monthly  
21 accounting for New Mexico's delivery into Elephant  
22 Butte Reservoir?

23          A.     No, they do not.

24          Q.     When's the Compact accounting done?

25          A.     It is in the following calendar year of the



1 release season, so it's typically in late January and  
2 February, and finalized in March.

3 Q. Okay. So the accounting for inflows from New  
4 Mexico to the Elephant Butte Reservoir for 2021 would  
5 occur in 20 -- in the spring or late winter of 2022;  
6 is that my understanding?

7 A. Yes, that's correct.

8 Q. Okay. Let's talk about the role of BOR, of  
9 Reclamation, during the period when releases of water  
10 are being made from storage. You previously testified  
11 that -- that allocation adjustments continue through  
12 the -- through the year or at least as long as there  
13 are inflows coming into -- into Elephant Butte  
14 Reservoir and releases are being made from Caballo.  
15 What other responsibilities does Reclamation have  
16 while releases are being made from Caballo Reservoir?

17 A. Reclamation is receiving orders from the  
18 irrigation districts and Mexico, and we review them  
19 and determine a release from Caballo to meet those  
20 orders, and we execute that release, then we are  
21 tracking the diversions at the diversion points for  
22 the project and Mexico, and we are also getting  
23 preliminary accounting for those diversions and the  
24 charges associated with them from the irrigation  
25 districts and IBWC and starting to review those.

1           Q.    What triggers the releases of water from  
2 Caballo Reservoir?

3           A.    An order from the irrigation districts or  
4 Mexico.

5           Q.    And does Caballo Reservoir make any releases  
6 for diversions by the project prior to getting an  
7 order from the districts or Mexico?

8           A.    No, we do not.

9           Q.    I'm going to show you what has been  
10 previously marked as U.S. Exhibit 661. Can you  
11 identify this document?

12          A.    Yes. This is an order form that is for the  
13 Rio Grande Project.

14          Q.    And is this an order form actually received  
15 by Reclamation?

16          A.    Yes, it is.

17          Q.    And when was this particular order form  
18 received?

19          A.    This is from July 15th of 2019.

20          Q.    All right. Is this the -- the sort of order  
21 form or order sheet that you -- that Reclamation  
22 receives and that triggers releases from Caballo  
23 Reservoir?

24          A.    Yes, it is.

25          Q.    So how does Reclamation determine what

1 releases to make from Caballo Reservoir based on these  
2 order sheets?

3 A. You can see on the order sheet, on the  
4 left-hand side, the irrigation districts and IBWC have  
5 put in their orders for the diversion points, and then  
6 on the right-hand side, there's terms for river boost  
7 and then a requested Caballo release is on this order  
8 form. So Reclamation is reviewing this, and then if  
9 we determine that the requested release for Caballo is  
10 accurate, then we will execute the release by making  
11 the change at Caballo Reservoir.

12 Q. Who does Reclamation get the order sheet  
13 from?

14 A. We get it from EP1.

15 Q. What's EBID's role in creating the order  
16 sheets?

17 A. EBID is getting orders from its farmers and  
18 determining the flow rate needed at their diversion  
19 points to meet those orders, and they provide that  
20 information to EP1.

21 Q. What's EP1's role in creating the order  
22 sheets?

23 A. EP1 is getting orders from its farmers and  
24 from the City of El Paso and they are determining how  
25 much flow they will need at their diversion points and

1 they put it into this order form. They are also  
2 collecting the order from EBID and from IBWC from  
3 Mexico, and they are responsible for collating it into  
4 this form and sending it to Reclamation.

5 **Q. You mentioned IBWC. What's IBWC's role in**  
6 **the order sheets?**

7 A. They are providing the value for the Mexico  
8 order.

9 **Q. And what is Reclamation's role once the order**  
10 **sheets are received?**

11 A. We're reviewing the order sheet to see if  
12 there might be an error. If there's no errors, the  
13 other thing they are reviewing is the requested river  
14 boost and determining if that makes sense for the  
15 hydrologic conditions that we are seeing at the gages  
16 in the river, and then if it does, then we accept the  
17 requested Caballo release and make a gate change.

18 **Q. And what is river boost?**

19 A. River boost is a volume of water or flow rate  
20 that is needed to get the Caballo release to the  
21 diversion points at the volumes requested.

22 **Q. And what causes the need for river boost?**

23 A. Losses in the rivers and system.

24 **Q. All right. Who determines the amount of**  
25 **river boost to request?**

1           A.     EBID and EP No. 1 coordinate and develop the  
2 river boost request.

3           **Q.     And what do they base the river boost request**  
4 **on?**

5           A.     They base it on how much water they are  
6 seeing show up at their diversion points.

7           **Q.     How often does Reclamation get the order**  
8 **sheets?**

9           A.     We get them almost daily. Sometimes we get  
10 them more than once a day.

11          **Q.     Do the districts determine the releases from**  
12 **storage needed to meet the allocation delivery**  
13 **requests?**

14          A.     No. They have an estimated request.  
15 Reclamation is the one who makes the determination on  
16 what the release will be.

17          **Q.     And who manages the releases from Caballo**  
18 **Reservoir?**

19          A.     Reclamation does.

20          **Q.     Does Reclamation coordinate releases with the**  
21 **districts?**

22          A.     We do in that they provide us an estimated  
23 release. If we agree with it, then we execute it. If  
24 we have a concern with the requested release, we will  
25 call them and confer with them, and then they can

1 release. Once we've made the release and it has been  
2 greater than a 100 CFS change, Reclamation will make a  
3 measurement of that change at our Caballo gaging  
4 station. Once we get that measurement, we provide  
5 that information to the irrigation districts. If they  
6 make a measurement at the Caballo gage, they provide  
7 that information to Reclamation.

8 **Q. Can we go back to --**

9 **JUDGE MELLOY:** While you're thinking  
10 Mr. Dubois, let me ask a question to clarify something  
11 --

12 **MR. DUBOIS:** Certainly.

13 **JUDGE MELLOY:** -- if I could. On these  
14 order sheets and -- and at various points in your  
15 testimony today, Ms. Estrada-Lopez, you indicated that  
16 you're delivering to diversion points, but is it my  
17 understanding that you only have control, so to speak,  
18 of the water until it gets to the Percha Dam, and then  
19 from that point south, it's up to the irrigation  
20 districts to manage the diversions?

21 **THE WITNESS:** I would say operationally  
22 speaking, once we make the release from Caballo, we  
23 probably still have control over it when it's in the  
24 river, but operationally, once the irrigation  
25 districts start diverting, we can't and we don't tell

1     them to not divert that unless it is not part of their  
2     allocation.

3                 **JUDGE MELLOY:**   I mean, you monitor it,  
4     and if they divert more than they're allocated, you  
5     know that, and you may say something to them, but you  
6     -- you don't have any real control over it except  
7     after the fact to admonish them for doing something  
8     they shouldn't have done; is that -- is that the way  
9     it works?

10                **THE WITNESS:**   Yes.

11                **JUDGE MELLOY:**   Okay.   That's what I  
12     thought.

13                Mr. Dubois?

14                **Q.    (BY MR. DUBOIS)   Can we go back to Slide 37,**  
15     **Demonstrative 36, for a second?   I missed a question**  
16     **or two here regarding the estimated diversion ratio,**  
17     **Michelle.   What causes the -- the estimated diversion**  
18     **ratio or the recalculated diversion ratio to vary?**  
19     **What is causing the changes in the diversion ratio?**

20                **A.    The gains and losses through the river to the**  
21     **diversion points.**

22                **Q.    And what sort of things drives the gains and**  
23     **losses to the river -- to the river?**

24                **A.    The return flows from the drains and the**  
25     **wasteways, as well as the amount of water from the**

1 river that seeps through the streambed into the  
2 surrounding groundwater.

3 **Q. And what causes that loss of water from the**  
4 **streambed?**

5 A. It's based on gravity, so if the groundwater  
6 surrounding the river is lower than the -- than the  
7 river, it pulls water out of the river, and the lower  
8 the groundwater, the more it will pull to a certain  
9 point.

10 **Q. Okay. All right. What's the role of**  
11 **Reclamation in accounting during periods when releases**  
12 **are being made from Caballo Reservoir?**

13 A. We are collecting preliminary charges against  
14 the allocation from the irrigation districts, and we  
15 are reviewing it related to the agreed-upon  
16 methodologies, which are based in the operating  
17 agreement and operations manual.

18 **Q. Okay. I'm going to show you what's been**  
19 **marked as New Mexico Exhibit 2464. Can you identify**  
20 **this document, please?**

21 A. Yes. This is the 2018 Operations Manual for  
22 the Rio Grande Project.

23 **Q. Okay. And what is the Operations Manual?**

24 A. It is a document that provides procedures for  
25 implementing the operating agreement.



1           Q.    Okay.  Who created -- who created this  
2   operations manual?

3           A.    The three entities to the operating  
4   agreement, so that's Reclamation, EBID, and EP1.

5           Q.    And how do you use this operation manual --  
6   or operations manual in performing your duties?

7           A.    When I get the preliminary charges for the  
8   irrigation districts, I am reviewing them for accuracy  
9   and to ensure that the methodologies used in the  
10   preliminary charges align with the agreed-upon  
11   methodologies that are based upon the operations  
12   manual.

13          Q.    Okay.  So is this the document you're talking  
14   about when you said you compared the information  
15   received from the districts to the -- to the processes  
16   set forth in the operations manual?

17          A.    Yes.

18          Q.    Okay.  Do the districts and IBWC send monthly  
19   reports to Reclamation?

20          A.    Yes, they do.

21          Q.    What information do they send to Reclamation?

22          A.    They provide us with the gage data for the  
23   specified locations that go into the allocation  
24   charges for each district and for Mexico's delivery.

25          Q.    So in addition to providing you the

1 information to verify the process for the information,  
2 what else does the operation -- the operations manual  
3 define for purposes of accounting?

4 A. It defines the locations, the charges should  
5 be taken from. It defines when orders for the  
6 allocation should be made and when Reclamation should  
7 make the gate changes. It defines the exchange of  
8 information amongst the parties. It defines how we  
9 can update the operations manual, and then it has some  
10 specific methodologies for the accounting of the  
11 charges.

12 Q. Is information -- is the data regarding  
13 Caballo Reservoir releases shared with the public?

14 A. Yes. Our gaging station takes instantaneous  
15 readings, and that is collected by a satellite, and  
16 then it is posted to the public via Reclamation's  
17 Website, the U.S. Army Corps of Engineers Website, and  
18 the IBWC's Website, and I'm pretty sure both  
19 irrigation districts also display it on their  
20 Websites, so that is the ways I know it goes out to  
21 the public.

22 Q. All right. I'd like to talk briefly about  
23 Reclamation's role after the end of the -- of the  
24 period of releases from storage. Next slide, please.  
25 I'm showing you what's been marked as Demonstrative

1     **37. Using Demonstrative 37, can you explain what**  
2     **Reclamation's role is after the completion of releases**  
3     **and prior to the start of the next water year?**

4         A.     Yes. I'm working through the allocation  
5     committee to finalize the allocation charges for the  
6     year, then calculate the final allocation, and then  
7     what's of that allocation is going to be available the  
8     following season.

9         **Q.     So how are the final allocation charges**  
10     **determined?**

11         A.     Well, EBID and EP1, again, they send us to  
12     the allocation committee their preliminary calculation  
13     of the final allocation charges, and IBWC provides  
14     Reclamation, who then provides it to the allocation  
15     committee, the deliveries to Mexico.

16         **Q.     Are there any charges included in the final**  
17     **determination of allocation charges that were not in**  
18     **the preliminary accounting kept by the allocation**  
19     **committee prior to that time?**

20         A.     Yes, there are.

21         **Q.     And what are those?**

22         A.     The final month of deliveries is not included  
23     in the preliminary accounting. It was included in the  
24     final accounting, as well as a charge for the  
25     Canutillo well field.

1           **Q.     And what is the charge for the Canutillo well**  
2 **field?**

3           A.     The Canutillo well field charge is a charge  
4 against EP1's allocation for groundwater pumping in  
5 the Mesilla Valley in Texas for the City of El Paso,  
6 and it is a proportion of the volume pumped during the  
7 release season and -- which is decreased by the volume  
8 of water returned to the river from the northwest  
9 wastewater treatment plant.

10          **Q.     Why is that charge only calculated after the**  
11 **end of the release season?**

12          A.     That's when we have the data for it, and that  
13 was the agreed-upon methodology.

14          **Q.     What does the allocation committee do with**  
15 **the updated data from the districts?**

16          A.     We review it similarly to the way I have been  
17 through the release season and looking at the  
18 calculations for any errors and also comparing it to  
19 ensure that it is matching the methodologies that had  
20 been agreed to in the operations manual.

21          **Q.     Are there set procedures and methodologies**  
22 **defined for determining the final allocation charges?**

23          A.     All of them have a basis in the operations  
24 manual, and some of them are fully described in the  
25 operations manual.

1           **Q.**    All right. What do you do after -- what is  
2           the -- what do you do, and what does the allocation  
3           committee do after you finalize the allocation  
4           charges?

5           A.    Once we have finalized the allocation  
6           charges, then we can determine the final allocation,  
7           and we take the final allocation charges, and we put  
8           them into the calculation for the diversion ratio. So  
9           now that the year has concluded, we can actually  
10          calculate the diversion ratio for the year, so we take  
11          the sum of the final allocation charges and divide it  
12          by the total release from Caballo Reservoir for the  
13          project. That is put into the allocation process  
14          under the operating agreement, and then we also add in  
15          the American Canal extension conservation credit and  
16          calculate the final allocation.

17          **Q.**    What's the American Canal extension  
18          conservation credit?

19          A.    It is a credit applied to EP1 for a volume of  
20          water that is delivered through the American Canal  
21          extension to the heading of the Riverside Canal  
22          instead of delivering it through the Rio Grande, and  
23          it's because there's water saved by doing that through  
24          a concrete-lined canal extension instead of the Rio  
25          Grande.

1           **Q.     How is the American Canal extension**  
2 **conservation credit determined?**

3           A.     It's determined based on the volume of water  
4 that's moved through that canal extension for the year  
5 and a proportion of that based on an estimate of how  
6 much water was saved is credited to EP1 and included  
7 in their final allocation.

8           **Q.     And why is that credit only determined after**  
9 **the completion of the release season?**

10          A.     That's the agreed-upon methodology, and that  
11 is going to have the data.

12          **Q.     Does the water calculated under the American**  
13 **Canal extension conservation credit always go only to**  
14 **EP1?**

15          A.     No.  It -- when it's calculated, it is added  
16 to the EP1 allocation, and if the allocation balance  
17 for EP1 is greater than the limit called for in the  
18 operating agreement, that volume is transferred to  
19 EBID.

20          **Q.     So maybe the question I sort of missed is how**  
21 **-- how is the -- how is the -- the American Canal**  
22 **extension conservation credit applied to the**  
23 **end-of-the-year accounting?**

24          A.     It's included in the determination of the  
25 final allocation and added to EP1's allocation for the

1 year.

2 Q. Okay. So it's in addition to the allocation,  
3 not -- it's in addition to the allocation?

4 A. Yes.

5 Q. And if EP1 is over its carryover credit, how  
6 is the American Canal extension conservation credit  
7 applied or accounted for?

8 A. It gets transferred to EBID if they are over  
9 the limit for their allocation balance.

10 Q. So that would be then an increase --  
11 similarly, that would be an increase in the allocation  
12 to EBID for that year?

13 A. Yes.

14 Q. Okay. After the allocation committee has  
15 calculated the final allocations to the districts, are  
16 there any other end-of-the-season adjustments that are  
17 made to the accounting?

18 A. Yes. There is an adjustment for any over  
19 delivery to Mexico, and also in the allocation balance  
20 transfers.

21 Q. What is the -- what is the adjustment for the  
22 over delivery to Mexico?

23 A. When Reclamation is making the determination  
24 for the allocation to Mexico, it is based on the water  
25 available for release, and that is what we allow to be

1 delivered to them. When we get to the end of the  
2 year, we know the actual volume that has been  
3 released. We put that into the D1 equation. If the  
4 volume delivered to Mexico is greater to the -- than  
5 the calculation under D1 using the final data, that's  
6 considered an over delivery to Mexico, then that  
7 volume is charged proportionately to EBID and EP1.

8 **Q. Okay. And what is the -- what is the**  
9 **allocation of balance transfers?**

10 A. Under the operating agreement, there is a  
11 limit to the allocation balance that each irrigation  
12 district can carry into the next season, so if the  
13 balance is greater than the limit called for under the  
14 operating agreement, that volume gets transferred to  
15 the other district and available for them in the  
16 following season.

17 **Q. How does the end-of-the-year accounting**  
18 **affect the allocation balances available to the**  
19 **districts in the following year?**

20 A. We take the final allocation and subtract the  
21 allocation charges, and we do the end-of-year  
22 adjustments, and then using the math of that, we  
23 determine their allocation balance, and that is going  
24 to go into their allocation for the following year.

25 **Q. Does the final accounting for the project**



1 occur before the Compact accounting by the Compact  
2 commission is done?

3 A. Typically, yes.

4 Q. When does Compact accounting occur? I think  
5 you -- you covered this earlier. Is it -- am I  
6 correct that -- that Compact accounting, or what  
7 you've testified as Compact accounting occurs in  
8 February or March?

9 A. Yes, it does.

10 Q. All right. And why does it occur after the  
11 end of the reservoir release and diversion period?  
12 Why does it occur in the next year?

13 A. Under the Rio Grande Compact, accounting is  
14 for a calendar year, which would be going through  
15 December 31st, so they need data for the entire  
16 calendar year in order to calculate their accounting.

17 Q. And does Reclamation have a role in Compact  
18 accounting?

19 A. Yes. We provide data to the Compact  
20 commission.

21 Q. Okay. I'm going to show you what's been  
22 previously marked as U.S. Exhibit 55. Michelle, can  
23 you identify what has been previously marked as US-55?

24 A. Yes. This is a slide deck that was used by  
25 Reclamation to present to the engineer advisors to the

1 Rio Grande Compact. This one is from March of 2020.

2 Q. Okay. Does this -- is this part of the data  
3 that -- or the information that you provide to the  
4 Compact commission through the -- through the  
5 engineering advisors?

6 A. Yes, it is.

7 Q. And is there data that accompanies this  
8 report to the engineering advisors?

9 A. Yes, there is.

10 Q. What data is supplied to the engineering  
11 advisors?

12 A. Reclamation provides hydrologic data for all  
13 of our reservoirs and gages that we are in charge of  
14 within the Compact basin, so that include elevation  
15 and storage for our reservoirs, weather data,  
16 including evaporation at our reservoirs, and releases  
17 for all of our reservoirs, as well as the San  
18 Juan-Chama project accounting and overview of our  
19 operations and maintenance activities at all of our  
20 projects within the basin.

21 Q. And where does the San Juan-Chama accounting  
22 come from?

23 A. My office is in charge of that accounting.

24 Q. Is that produced -- is that produced from the  
25 URGWOM model that you described earlier?

1           A.     Yes.  It comes from the URGWOM accounting  
2     model.

3           **Q.     So are you providing them the model output?**

4           A.     Yes.  We provide the San Juan-Chama  
5     accounting report that comes from the data from URGWOM  
6     accounting model, and the accounting model is also  
7     provided to the Compact states.

8           **Q.     And is the -- is the -- is that just an**  
9     **annual accounting or is -- are they provided the daily**  
10    **accounting?**

11          A.     We provide New Mexico the accounting every  
12     day that we run it through our FTP site.  We also  
13     provide it to Colorado and Texas when they ask for it  
14     throughout the year, but then the official  
15     transmission is through this engineer advisor process  
16     the following calendar year.

17          **Q.     And -- and what -- what output from that**  
18    **model do you provide the engineering advisors?**

19          A.     In the San Juan-Chama report, it is focused  
20     on the San Juan-Chama project accounting, but it  
21     includes all of the information that goes into that  
22     accounting, including the hydrologic data at the  
23     reservoirs.

24          **Q.     Okay.  Do you provide the engineering**  
25    **advisors or the Compact commission any other data that**

1     you know that they use in their accounting?

2           A.     No.

3           Q.     Do you know whether there's an ongoing  
4     dispute between Texas and New Mexico for Compact  
5     accounting?

6           A.     Yes, I do.

7           Q.     Can you generally describe that controversy?

8           A.     There is a disagreement in the methodology to  
9     calculate evaporation on the Compact credit water  
10    being stored at Elephant Butte that goes into the  
11    Compact accounting.

12          Q.     Does the report to the engineering advisors  
13    include computations or accounting for evaporation of  
14    San Juan-Chama or credit water?

15          A.     Yes, it does.

16          Q.     So that information is provided to the  
17    engineering advisors?

18          A.     Yes. It's in the URGWOM accounting model.

19          Q.     How does Reclamation's determination and  
20    calculation of actual inflows for purposes of  
21    allocating available water -- strike that. Let me  
22    rephrase that.

23                 To your knowledge, does Reclamation's  
24    determination and calculation of actual inflow for  
25    purposes of allocating available water determine the

1 Compact commission accounting for evaporation of  
2 credit water?

3 A. No, it does not.

4 Q. Does Reclamation's determination and  
5 calculation of actual inflows for purposes of  
6 allocating available water dictate how Texas accounts  
7 for evaporation or -- of credit water for purposes of  
8 the Compact?

9 A. No, it does not.

10 Q. Does the Compact commission methodology for  
11 calculating evaporation of credit water tend to  
12 actually overestimate the amount of actual evaporation  
13 from Compact credit water?

14 MR. WECHSLER: Objection, Your Honor,  
15 foundation, and this also sounds like it's going into  
16 an area of expert testimony.

17 MR. DUBOIS: This is simply comparing  
18 the two accounting -- the two methods of accounting,  
19 Your Honor. This is not even expert testimony.

20 JUDGE MELLOY: Well, rephrase your  
21 question. It --

22 MR. DUBOIS: All right.

23 JUDGE MELLOY: It makes it sound like  
24 your question was asking which is the correct method.  
25 If you're asking her to compare the two, that's fine.

1 If you're asking her which is the more accurate, I  
2 think that -- I think Mr. Wechsler may have a good  
3 point.

4 **MR. DUBOIS:** It was not a question of  
5 accuracy. It was a question of methodology, Your  
6 Honor.

7 **Q. (BY MR. DUBOIS) Ms. Estrada-Lopez, do you**  
8 **know how the Compact commission determines the methods**  
9 **that they use for determining evaporation of Compact**  
10 **credit water?**

11 A. Yes. I've reviewed the methodology.

12 **Q. And what methods do they use?**

13 A. In Compact accounting, they are using a  
14 monthly storage value for Elephant Butte Reservoir,  
15 and that is the storage value that the evaporation is  
16 applied to.

17 **Q. Does Reclamation use a monthly calculation in**  
18 **determining storage values and, therefore,**  
19 **evaporation?**

20 A. No. We are using daily storage values to  
21 determine the evaporation.

22 **Q. Do those two methodologies -- can those two**  
23 **methodologies give you a different number for**  
24 **evaporation for the same year?**

25 A. Yes, they do.

1           **Q.**     All right. Does the methodology used by the  
2     Compact commission tend to overestimate the amount of  
3     actual evaporation from credit water in contrast to  
4     the daily accounting?

5                   **MR. WECHSLER:** Your Honor, I'm going to  
6     object again. I'm also going to object as this being  
7     vague. The testimony has gone forward based on this  
8     idea that the methodology used by the Compact  
9     commission, but I believe Ms. Estrada-Lopez just  
10    testified that there's more than one methodology  
11    that's being used, so I'm not sure what this is even  
12    referring to, whether it's the -- the version from  
13    Texas or the version from New Mexico and Colorado.

14                  **JUDGE MELLOY:** I'm going to overrule.  
15    You can answer the question.

16           **A.**     I'm sorry. Can you repeat the question?

17           **Q.**     **(BY MR. DUBOIS)** I probably can't because I  
18    don't have realtime -- or I don't have it up, I should  
19    say.

20                  **JUDGE MELLOY:** Do you want me to have  
21    the reporter read it back?

22                  **MR. DUBOIS:** Could you, Your Honor?  
23    Thank you.

24                  **JUDGE MELLOY:** Heather, can you do that,  
25    please?

1 (The requested portion was read.)

2 A. When you're using one storage value for an  
3 entire month to calculate the evaporation compared to  
4 the changing daily storage values, you will get a  
5 different answer. Some months, it will be greater;  
6 and some months, it will be less.

7 MR. DUBOIS: Okay. Thank you. I have  
8 no further questions for this witness, Your Honor.

9 JUDGE MELLOY: Pretty good timing,  
10 Mr. Dubois. It's just about 5:00 our time. Let me  
11 ask --

12 MR. DUBOIS: I aim to please, Your  
13 Honor.

14 JUDGE MELLOY: All right. Let me ask  
15 this. I know Texas and the United States are  
16 basically working in tandem on these witnesses. Are  
17 you going to do the entire examination or do you --  
18 are you going to be asking any questions, Ms. Klahn?

19 MR. DUBOIS: You're not live.

20 MS. KLAHN: Sorry. Could you mute?

21 MR. DUBOIS: Yeah, I'm going to.

22 MS. KLAHN: At this point, I'm not  
23 planning to ask more than one or two questions, and  
24 I'm going to try and funnel those through Mr. Dubois  
25 for redirect. That's the plan for this witness.



1                   **JUDGE MELLOY:** All right. And then what  
2 about Mr. Wallace, are you going to be asking any  
3 questions?

4                   **MR. WALLACE:** Your Honor, at this point,  
5 I'll need to evaluate what New Mexico does on cross,  
6 but the United States may have raised some issues that  
7 are a direct interest to the State of Colorado.

8                   **JUDGE MELLOY:** All right. Well, then  
9 we'll -- we'll adjourn for the evening, and we'll do  
10 -- start the cross first thing in the morning, and so  
11 I'll see everyone tomorrow morning. Thank you,  
12 everyone.

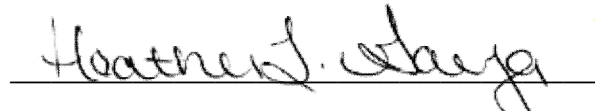
13                   (The proceedings adjourned at 5:00 p.m.)  
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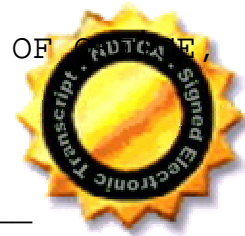
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